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Original Communications.

*CLINICAL NOTES ON ASTHMA AND ITS TREATMENT.**

BY BEVERLEY ROBINSON, M.D.,
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Among the diseases the practitioner is called upon frequently to treat, none is of greater interest than asthma. Possibly this interest is due in part to the fact that its immediate causation is at times very obscure. No doubt, however, it is accentuated much by the fact that when we are sure as to the cause of the asthmatic attack, or condition, we can in many instances be of great service to the sufferer. This statement is, of course, more correct where we encounter cases which are relatively of late date, and where, if the etiology be determined, we can be confident as to our power to relieve or cure.

The cases of so-called nervous asthma, or asthma merely functional and without fixed causation, have been in my experience relatively very infrequent. I do not doubt that they do occur, because many reliable authorities speak of them in no uncertain terms. And yet I do believe, when we are better

*Read at the fifteenth annual meeting of the American Climatological Association, at Maplewood, N. H., Aug. 31, 1898.

informed, such examples of purely functional asthma will dwindle immensely, and perhaps, indeed, no longer be described. I do not wish to be misunderstood. In the majority of, not to say all, cases of asthma, there is probably a certain sensitiveness of the central or peripheral nervous system which accounts in a measure for the recurrent attacks of this affection. What I wish to insist upon, however, or emphasize most emphatically, is that despite the existing nervous irritability, the asthmatic attack would rarely occur were there not some other discoverable cause which more advanced researches will reveal to us.

Conditions of the blood are often ignored which, if closely inquired into, will throw light upon an otherwise very indefinite causation. Malarial toxemia is frequently present and yet ignored. The reason for this is because, first, malaria may be present, causing slight enlargement of spleen and liver, moderate secondary anemia, engorgement of the nasal, laryngeal and tracheal mucous membrane, or other parts of the upper or lower air-tract, and yet be lost sight of, or its presence questioned or doubted. Again, this is true where there is apparently no physical change of organ; and yet constant or frequently recurring symptoms of headache, backache, disordered stomach, general fatigue, inertia, irregular, chilly sensations, inappetence, constipation, or diarrhea, may be proof of or point toward it. It is wisdom for an observing practitioner to be quick to see and act in accord with its recognition. If a blood examination be made under one or other of these circumstances, shall we be definitely informed as to the malarial nature of the condition preceding the asthmatic seizure? Occasionally, yes; more frequently, not to say usually, no, in such instances. If there has been a sudden chill, followed by rise of temperature and sweating, and if at the time of the chill and previous to the giving of quinine internally a skilful microscopic examination of the blood be made, the plasmodium malariæ should be found usually, but not invariably. When we are face to face with the asthmatic attack, how should we proceed, given a possible or probable malarial causation? If it be only indefinite, and yet no other cause be found, I advise Fowler's solution of arsenic to be given in increasing doses up to its physiological effect. If the bowels are notably constipated and the liver evidently inactive, I advise Warburg's extract in five-grain doses three or four times daily. If anemia be present I advise quinine, iron, and arsenic in a suitably formulated pill, the following being a favorite with me: 1 grain of reduced iron, 2 grains of sulphate, or preferably the muriate, of quinine, and $\frac{1}{60}$ to $\frac{1}{30}$ grain of arsenious acid, three times daily after meals. Of course, if the asthmatic attack be severe, we should also employ our antispasmodic remedies, such as belladonna, chloral, nitroglycerin, etc., judiciously. We should also permit patients to smoke and inhale from a cigarette d'Espic, *Datura Tatula* (Savory and Moore), or of simple nitre-paper. As a last resort, an inhalation of a small quantity of chloroform or a hypodermic of morphine and atropine may become our only satisfactory help in time of greatest need.

As to gout and rheumatism as causative factors of asthma, what should be said? I am in accord with those who find in these constitutional conditions an underlying influence of great power in causing nervous irritability and characteristic appearances of the throat. Wherever we have the clear history of a previous attack of acute rheumatism or gout, and where, in addition, we have cardiac, joint, or renal signs and symptoms which plainly indicate one or other diathesis, we rightly infer many times that the asthmatic attack is of similar origin. Of course, accidental circumstances, such as overfatigue, errors of diet, exposure to cold or wet, great anxieties or cares, may hasten, or indeed occasion, an outbreak of asthma, when without these incidental occurrences the dyspneic attack would not have shown itself.

To indicate how important it is at times to recognize the inherent gouty poison dormant in the system, so as to effect speedy amelioration or cure of a patient's symptoms, I would refer for a moment to a dear friend and patient now deceased several years. The case was that of a lawyer, eminent in his profession, about fifty years of age, who had on several occasions gouty manifestations of the joints, marked torpidity of the liver, and a considerable deposit of lithates in the urine. For these symptoms he had been to Carlsbad for treatment, and, thanks to this cure and marked abstemiousness in his daily habits, he was able during quite a while to be in a fairly comfortable bodily condition. On one occasion, after a prolonged period of rest from annoying intimations of disease, he was attacked every afternoon at a particular spot, during his walk up town, with marked dys-

pnea. To explain it, if possible, the urine was carefully examined, the heart and lungs interrogated, the diet and habits rigidly catechized, without any positive finding resulting. Despite the trial of various compounds given, so as to meet rationally any hidden or mysterious conditions which Nature was holding concealed, my patient's difficulty of breathing was in no sense relieved. Finally, I concluded that renal inadequacy, due to gout, was the efficient cause, and that substances ordinarily eliminated through the kidneys, but now retained in the system, were the explanation of his suffering. Proceeding upon this theory, I ordered colchicine granules, one milligramme in each granule, three or four times daily, and very soon my patient was completely restored to health for a time. During a few days following the use of colchicine the urine, which previously had seemed normal, was loaded with lithates, thus showing the action and beneficial effect of the alkaloid. Aside from purely diathetic conditions, it is highly probable that anemia, accompanied with constipation, dysmenorrhea, and pronounced general neurasthenia, is more than sufficient to initiate in certain susceptible women attacks of asthma which can only be effectually treated where these morbid states are judiciously dealt with.

As to reflex causes of asthma. In the nose and throat we find morbid conditions, with which we are all at the present time more or less familiar, that occasion it. When they exist it is clearly indicated, as a rule, to do what is essential to relieve them. Thus, if more or less complete occlusion of the nasal passages exists, owing to hypertrophy of the turbinated bodies, a deviated septum, soft gelatinous polyps, or in children an adenoid growth, is present in the nasopharynx, or much enlarged faucial tonsils prevent normal breathing, we cannot feel satisfied with our care of the patient unless operative interference be undertaken to modify or remove these evidences of disease. While this is true it should be admitted to-day that several prominent throat specialists have exaggerated, or unduly magnified, the diseased conditions of throat and nose as causative in producing asthmatic attacks. I have in mind a physician of prominence in another city who was greatly annoyed with occlusion of the nasal passages from gelatinous polyps. His periodical attacks of asthma had been attributed to their presence. They were skilfully removed by a rhinologist, and yet the attacks soon returned with nearly their old-time severity. I had under my care not many years ago a young man, now a promising political leader, whose nose was greatly obstructed by pronounced deviation of the septum. The drill and trephine were used, and fair nasal breathing thus obtained. Despite this treatment, with satisfactory result from the specialist's standpoint, morphine injections, hypodermically, had to be resorted to on several occasions subsequently in order to afford notable relief to the breathing.

In chronic gastric catarrh, brought on by errors of diet or alcoholic habits, frequent lavage of the stomach and a regulated regimen have afforded great relief in more than one instance to the frequency and intensity of asthmatic seizures. In some instances in which the total acidity of the stomachal contents, taken after a test meal, would seem to indicate, when allied with severe, repeated attacks of gastralgia, a possible beginning of ulcer of the stomach, I have little doubt that a prolonged use of Vichy or Vals water, with an occasional mercurial purgative, not only afforded relief to the stomachal condition, but also lessened the seriousness of the asthma.

We now come to a consideration of what, after all, are the large number of asthmatics we are likely to see. They are the bronchitic cases — cases in which there is also more or less development of emphysema. Taking cold, as it is said, apart from every other consideration, is what seems to the patient the essential cause of his asthma. He will get along peacefully for weeks without any evident pulmonary distress, and then, owing to slight atmospheric changes, wet feet, sitting in a draught, going from an overheated room to the outside atmosphere, very soon he will notice more or less oppressed breathing and all the usual asthmatic phenomena. In very many of these cases, although they may claim that between the periodic attacks they feel perfectly well, yet when they are questioned closely we shall find almost invariably that upon slight exertion they suffer from short breath and cardiac palpitations. If we examine the chest carefully the percussion note, as well as ascultation, shows here and there patches of pronounced vesicular emphysema. The latter may have developed slowly and insidiously; nevertheless, when we watch our patients closely, we shall find that the emphysema extends and involves more lung tissue with the recurrence of each asthmatic attack. The development of the emphysema in its initial stage is not, however,

always obscure or uncertain. Very often, and particularly in children, whooping-cough, croup, enlarged tonsils, acute bronchial catarrh, may have previously existed and are quite sufficient to occasion a slight organic condition of emphysema. Where the emphysema is present, recurrent attacks of acute bronchitis are apt to follow for a very slight cause. The mere fact, for example, of the inhalation of an impure atmosphere for a short time will frequently cause the development of bronchitis. If we listen to the chest we shall find sibilant and sonorous ronchus in abundance, varied at times with moist sounds, even though the secretion is often in small quantity (frothy or viscid), which leaves us in some degree of uncertainty as to the precise condition of the lung tissue.

If the lung, instead of being of good resonance (not to say hyperresonant), becomes, in special areas at least, dull and non-elastic, does not expand as it should, and we also have muffled or bronchial voice and whisper, we are often undetermined in our judgment as to how much pulmonary tissue is involved.

We are also in doubt as to the pulmonary condition in regard to inflammation. Have we to do with bronchopneumonia affecting one or more lobules? Have we a local atelectatic condition due to the plugging with hard, inspissated mucus of a large or small bronchial division? Is it only increased pulmonary congestion accompanying bronchial inflammation? Or, and especially when the râles are superficial and moist, are the pleural surfaces somewhat inflamed, and do their contact and rubbing together give rise in part to the stethoscopic signs we surely find? These and other questions are clinically most difficult to decide and accept for the *ipse dixit* which at best conceals ignorance. I believe that most men of large clinical experience will reecho my expressed thought. Of course, the presence or absence of fever, the number of leucocytes found in a careful blood-count, the local pain aroused during respiration and cough, will not infrequently help us very much to reach a rational and tolerably satisfactory judgment. Where the bronchitis is clearly defined and the secretion slight, our main effort should be to stimulate the latter by appropriate means, and here I find small repeated doses of ipecac, tartar emetic, grindelia robusta, chloride of ammonium, and iodide very useful. Where the bronchitis is also evident and yet there is much bronchial secretion, belladonna or atropine must be combined in small or moderate doses with the drugs previously named, or be given with a little camphor and quinine in capsule or tablet form, or else, what is often preferable, simply alone, until their physiological effect becomes manifest. Where the emphysema and bronchitis are clearly defined, and where the asthma is also pronounced and threatening, we cannot wait always for the relatively slow and continuous effects of the drugs referred to, and here again we must have recourse for temporary results to inhalation of the fumes of the different antispasmodic cigarettes, of the leaves of stramonium or tobacco, the repeated use of oxygen gas, the timely administration of Hoffman's anodyne, alcohol, hot coffee, capsules of ether or chloroform, etc., always remembering that in very many cases nothing will give relief even for a while, unless it be chloroform by inhalation or morphine hypodermically.

Where, in connection with the previous conditions, we have evident cardiac distention, as shown by increased area of dulness, epigastric beating, distended jugulars, rapid, depressible, weak, sometimes irregular, pulse, cyanotic lips, face, and finger-tips, we must recur to the use of nitroglycerin or the nitrites in frequently repeated doses; or to a soluble salt of caffeine (salicylate), either by the mouth or hypodermically. Occasionally blood-letting by bleeding from the arm or the use of leeches, or wet-cups to the chest or epigastrium, will afford relief more or less lasting, according to circumstances. Usually, I regret to say, the relief is only temporary, and the weakened, distended right heart is soon again powerless to struggle against the ever-present conditions of lung involvement and vascular and nervous paralysis. It is specially under these conditions that we must be particularly careful in our use of a remedy like nitrite of amyl when used by inhalation, which instead of affording marked relief by relaxation of the arteries only seems to occasion further and more intense pulmonary congestion, and thus adds an additional obstacle in front of a right heart already overtaxed. Within a few weeks of writing this I have had occasion to notice these dangerous effects. In the case of an old asthmatic patient who was suffering, and from whom I was desirous of withholding a morphine injection in the fear that it be repeated too frequently and thus give rise to the morphine habit, the rapid inhalation of only three minims of nitrite of amyl increased the dyspnea suddenly to a most alarming degree. The veins of the neck became largely dis-

tended, the face intensely cyanosed, the eyes suffused, glassy, and so prominent as to appear to start from their cavities. Frequent and labored breathing developed immediately, followed by repeated efforts of expectoration, during which sputum partly frothy, partly thick, and mucopurulent, was expelled with great difficulty. All these and other serious symptoms gave rise to a graphic and distressing picture not soon to be forgotten. In a short while, however, thanks to the timely help afforded by a hypodermic of tincture of strophanthus, there was a visible temporary amelioration. Despite our best efforts, however, the patient failed rapidly, and died a few days later. At the autopsy the most marked pathological feature of the case was the advanced degree of pulmonary emphysema. In one spot on the anterior border of the right lung evidently one or more of the marginal vesicles had been ruptured, and we noticed a very large sac filled with air and surrounded by the visceral pleura. The sac itself was equal in size to a turkey's egg.

One of the difficult matters to decide in the treatment of asthmatic attacks is when and how frequently we should give morphine injections hypodermically. In the majority of cases that have come under my care I am confident that no remedy will give such immediate and considerable relief to the acute suffering. On the other hand, we have the just dread of beginning a habit so pernicious and so difficult to cure, if once established, that I am compelled to counsel great care in its use. This counsel is eminently wise for attacks, even though severe, that are often repeated.

Again, it should be known that morphine injections will not invariably afford relief. There are times when morphine in any ordinary dose will aggravate rather than subdue the attack, and even add gastralgia to the intense dyspnea from which the patient is already suffering so much. When, moreover, the patient's urine contains an appreciable amount of albumen and affords other evidences of nephritis, it is often very hazardous to recur to the use of morphine. This is particularly true where the pupils are notably contracted. I have good reason to believe that by administering morphine under like circumstances we may precipitate a rapidly fatal uremic attack.

The question of change of locality is frequently one which arises and which is so difficult to solve. In general, we would have our patients seek atmospheric conditions quite dissimilar to those in which the attack originates and continues despite our watchful care. If the patient be resident of a city or large town, first of all we should have him change his neighborhood for awhile, and often even this slight change is useful. If this proves unavailing, and he be living near the coast, we would have him go to some healthy inland place of moderate elevation, free from dust and cutting winds, if possible. If the town be inland where the person first becomes a sufferer, we should strongly insist upon a prolonged stay by the sea. And yet I regret to add that all our efforts in this direction are often unavailing and the patient continues to suffer about in the same way, no matter how often we change the locality in which he lives. There may be and often is temporary relief. Quite frequently we learn with great satisfaction that the patient has obtained just what he most desired, viz, relative great quiescence from suffering, or, indeed, the diminished frequency of the attacks. Unfortunately, we cannot count upon this well-being as durable, and sooner or later the asthma is prone to return with its former intensity. Personally, I am inclined to believe, after considerable experience and reflection, that the climatic conditions which shall prove best for any particular case of subacute or chronic bronchitis are also those best suited to the bronchitis when complicated with asthma.

DISCUSSION.

Dr. F. I. Knight: I think Dr. Robinson has done a good service now and heretofore in calling attention to the constitutional element in cases of asthma. The gouty or the malarial condition which is often the excitant of the attack is undoubtedly often neglected. It seems to me that asthma is a very complex thing. Asthma is due, first, to an underlying neurosis; secondly, to some lesion in the bronchial tract, I think almost invariably, if not always; and thirdly, to some excitant. In treating the paroxysm, if we can relieve or modify any one of those factors we can stop the paroxysm. I had a patient who could always relieve an attack of asthma by gambling for high stakes. It is possible, in certain cases, to change or alter the organic lesion; but we can remove the excitant, or remove the patient from the excitant. Englishmen who are subject to asthma will relieve it at once by going from the country up to the city. I know a patient who

always has asthma in one hotel in Boston and never has it in another, and the hotels are within a block of each other; and no one has been able to tell the cause. So we have these various factors on which we may work in the interval. The gouty or malarial constitutional condition which I consider the excitant may be so modified that the patient's attacks may be relieved; so it is with those cases where an organic lesion in the upper part of the respiratory tract acts by reflex on the air-tubes below. Often when polypi are removed there is only temporary relief, and then some other irritant comes in by reflex or otherwise. I might mention here the theory of Berkart, that the lesion in ninety per cent of cases is in the lungs, and comes from measles or whooping-cough or other inflammatory affections of childhood. Dr. Hyde Salter put the proportion at eighty per cent. I think this may be an exaggerated statement, but since reading it I have traced a large number of cases back to inflammatory conditions in childhood. In regard to the bronchial cases and their relief, I should, perhaps, urge more strongly than Dr. Robinson the value of the iodide of potassium. No one remedy has served me so well as this. In the epiphysematous cases there is one thing which above all should be insisted upon, and that is rest. The patient who has been miserable with repeated attacks of asthma at night for weeks and months may be, perhaps, relieved for considerable time by restricting his movements and administering strychnine freely. It is an interesting subject, but certainly a very perplexing one, and worthy of a great deal more study than is usually given it; and if men will take the pains to investigate individual cases and not consider them simply cases of asthma and treat the name, but will try to get at the conditions which underlie them, they will have much better results in their attempts at treatment.

Dr. V. Y. Bowditch: It is an interesting fact to me that not many weeks ago Dr. A. C. Klebs, of Chicago, lately of Citronelle, Ala., told me of some striking results from the use of diphtheria antitoxin injections in cases of asthma, at the suggestion of (I think) Revillod, of Geneva. Although very skeptical as to its efficacy, he had tried it in the case of a young girl, about ten years old, who had been subject all her life to attacks of asthma. In her case he had used it once or twice with apparently very marked benefit. The patient is really too young to have the mere moral effect of trying a new remedy in such cases taken much into consideration. In another case very marked improvement was noticed in a lady who for years had been a great sufferer, and who had tried almost every known remedy. The good effect of each injection, moreover, lasted many weeks, and at last accounts she was better than for many years before. I give these suggestions for what they are worth without further experience. They come from a careful and cautious observer, not easily convinced of the efficacy of new remedies, but who was at the time certainly impressed.

Dr. Frank S. Johnson: I wish to add my testimony to what Dr. Robinson has said about the condition of constitutional infection, and the necessity of determining primary cause. But in almost every case of asthma, whatever the primary cause may be, we have to deal with bronchitis and spasm, and in order to obtain prompt satisfactory results, no matter whether the primary poison is eliminated or not, we must direct the treatment temporarily to the immediate disturbance. I concur most fully with what Dr. Knight has said, that the most important remedy is iodide of potash. It should be given in moderate doses, continued for weeks or months, if need be. The relief of the paroxysms is the important thing in the patient's extremity. In mild attacks this may be accomplished by the administration of belladonna and chloroform internally. Chloroform given internally acts more slowly than by inhalation, but the action is more prolonged, and it is safer. In severe paroxysms the nitrites are often very useful. I prefer nitroglycerin. Its action is very prompt, almost as prompt as nitrite of amyl. The vasomotor effect of one one-hundredth of a grain can often be felt within two minutes. The dose may be repeated every ten to sixty minutes as required. Nitrite of amyl is much more dangerous in the hands of the patient than nitroglycerin. Morphine is safer and more useful than the nitrites in asthma with greatly embarrassed right ventricle.

Dr. J. B. Walker: I would like to refer to one climatic factor that is within every one's reach everywhere. This is sunlight. A patient living on one side of a street may be exempt from asthma, while on the other he may be affected. This may be due to the fact that on one side he lives in a shady room, and on the other side in a sunny one. This is a factor of no small moment in not only the asthmatic, but in all subacute and chronic bronchial disorders.

Dr. R. G. Curtin: Dr. Walker's remarks about a person being able to live on one side of the street and not on the other recalls to me the history of a case. Some of you probably know that Market Street in the past was supposed to be the dividing line between the older and the newer society of Philadelphia. A man who lived on Walnut Street at that time found that if he walked across Market Street toward the north he would instantly have an attack of asthma, which was relieved by returning to the south side. Dr. Knight's patient reminds me of a confirmed asthmatic who, whenever he had a severe attack of asthma, was always relieved by sitting on a chair in a cool damp cellar when the day was hot and dry.

Dr. Jacobi: I think, Mr. President, the ground has been gone over pretty thoroughly, and nothing has been left untouched. Reflex neurosis, particularly nasal, I have myself charged with being the occasional cause of asthma, but I know that the large majority of cases of asthma I have seen were connected with bronchitis. There is rarely a case that will not exhibit the symptoms of diminished respiration and some dulness over small parts, very frequently over large parts, generally posteriorly and over the lower lobe. It is mainly these cases that are benefited by iodide of potassium. They are not so much affections of the mucous membranes as of the connective tissue of the bronchial tubes and their surroundings, with thickening of the walls. The term "peribronchitis" has been dropped by a great many, but I think it is a good word to show exactly what it is meant to signify. As the attacks mostly come on in the night, I do not hesitate to give a dose of morphine, with or without chloral hydrate, every night for a long time, and not infrequently it will be the first step in the treatment of a cure. I give good doses, always the same. I never had to increase it, and never developed a case of morphinism in an asthmatic person so treated. Then, it is necessary that the window should be open enough to admit air. The attacks come on when there is carbonic acid and other poisonous gases in the air, when the medulla oblongata is oversupplied with carbonic acid and undersupplied with oxygen. As far as emphysema is concerned, it may be sometimes incurable, but it can be benefited a great deal. One other thing: let your patients be practised in forcible expiration, which may be helped along by compression of the diaphragmatic region, according to the plan of Gerhardt and others. The patient may use a towel for that purpose, which he works himself. An additional help for the purpose of improving expiration is snuff. I make them sneeze very hard four, five, ten times every day—a very satisfactory method, and not very expensive.

Dr. J. H. Musser: In the management of this affection reference has been made to, and I concur in the necessity of, hygienic and largely to dietetic measures for its relief, not excepting climatic influences. With regard to remedies, asthma is the disease which exemplifies the law that the more incurable the disease, the more remedies there are for the affection. It certainly is a disease that requires the study of each individual case. I am satisfied in a number of cases, as Dr. Jacobi remarked, that sedatives are very beneficial. I am sure I have seen, barring the fact that the disease may probably have disappeared independently of my management, one instance where the use of morphine every night, hypodermically given, cured the patient. The object was to anticipate and prevent the occurrence of the paroxysm. The patient was in the family of a physician, and the physician was able to watch the effects, beginning at first with doses sufficient to control the spasm, and each night lessening the dose, until finally the patient was able to do without the morphine, when the paroxysms had disappeared. I do not fear in asthma, barring that form of asthma which is purely a neurosis, the development of the morphine habit; in fact, I have never seen (although I have seen a large number of cases) the morphine habit occur in asthmatic subjects. I think it is a very good rule to keep in mind in the management of all cases that in the neuroses we are liable to create the morphine habit, but rarely in organic disease, as rheumatoid arthritis and other conditions of that kind, is it likely to occur. I have also used iodide of potassium, varying the dose with the individual and increasing it until we get a physiological effect of the drug. In the cases in which operative measures are first resorted to, if we follow immediately after the operation with the use of the drug we can prevent that recurrence which often does unfortunately take place. In bronchial affections, and particularly in the class of cases where, in early childhood, there were inflammatory conditions, iodide of potassium seems to be of a very great advantage. Another group of drugs which, in some instances, serve me

well are strontian salts and nux vomica. Nux vomica has been very satisfactory, continuing it over a long time. Such dose is given as produces physiological effects, then reducing the dose, bearing in mind always that the patients become accustomed to the remedy. From time to time you may increase the dose in order to get its effects. In this manner I have had patients take as much as one hundred drops of tincture of nux vomica three times daily. In another instance with the nux vomica given in this manner and the morphine at night, watching the effects and gradually diminishing the dose of morphine, I have one patient absolutely cured. There may be other drugs that occur from time to time which may be of use, but these are the remedies that occur to me. We must not forget in the treatment of asthmatics the value of inhalation, and especially of treatment directed to the local condition. In examining the sputum of many of these asthmatic patients we find the infection of streptococci, indicating that there is a localized infection. These cases I am sure are the most difficult to manage, and for them we must resort to climatic influence.

Dr. Blackader: We all agree, I am sure, with Dr. Musser in emphasizing the importance of first removing, as far as possible, any reflex source of irritation, and then carrying out a vigorous constitutional treatment of the disease. Personally I agree with him as to the value of morphine in relaxing spasm, if employed with caution over short periods of time; but I differ from him when he minimizes the danger in these cases of the morphine habit. There is, however, another drug of which I stand in still greater dread. That drug is cocaine. Two patients of mine who, to obtain relief from a troublesome bronchial asthma, were sent to climatic resorts in the South, returned slaves to the local employment of cocaine. When nasal troubles exist, the relief that cocaine affords is prompt, but only temporary. In the end it unquestionably increases the local damage; more important still, it ruins the patient morally. As a society we should raise our voice in condemnation of its use.

Dr. W. D. Robinson: Exhibition of iodide of potassium causes gastric distress and nausea. When given in junket it can be safely administered without trouble, and the doses largely increased.

Dr. Musser: I want to indorse what Dr. Blackader said in regard to cocaine. It is infinitely more dangerous than morphine.

Dr. Coleman: I want to speak in corroboration of what Dr. Blackader said concerning the use of cocaine. I have a patient now under my care who has become addicted to the cocaine habit by using it as a spray, and he uses as much as an ounce of the crystals in two or three days. I do not know of any such amount ever having been taken, but he has reached the point where he can scarcely go for fifteen minutes without using the spray.

Dr. E. O. Otis: Reference has been made to the beneficial effects of removal from one room to another, and from one side of the street to the other. As illustrative of this, a case occurred to me a few days ago where the asthmatic paroxysms were most severe and distressing, and in relieving which all the ordinary and extraordinary methods of treatment failed, including subcutaneous injections of morphine, and momentary relief was only obtained by the inhalation of ether. The removal from one room to another, and the substitution of pillows made of other material for feather ones, appeared to be the determining factors in relieving the attack.

Dr. Robinson: I have two things to say; one is for the people: I trust that if any ladies and gentlemen who are now in this fair region have been willing to listen to what has been said, they are also willing to recognize that it is wisdom to take no panacea for the relief of asthma, but to put themselves in charge of a far-seeing and intelligent physician.

One point not referred to in my paper is a question in regard to the use of morphine. I have been on the lookout for it, but have not yet struck it. A point I made was in reference to the use of morphine injections in uremic conditions, and as to when we could use morphine injections to break up uremic convulsions, and when not. We all know that the late Professor Loomis certainly acted in a very able and satisfactory manner when he showed us in certain acute conditions there was nothing better to break them up than injections of morphine; but we also know that in certain cases of chronic nephritis it is a very dangerous remedy. In looking over Dr. Loomis' cases I notice that in every instance, without exception almost, where it is mentioned, the pupil is indicated as being dilated. Wherever a patient is shown to have kidney trouble I always look at the pupil before I give my hypodermic of morphine. If contracted I will not give it. In chronic asthma recollect that we have to do with

people of a certain age and a certain amount of interstitial nephritis. Many have a certain amount of albumen in the water. I think that the question of whether they have interstitial nephritis will depend upon the specific gravity of the urine. We are not always able or ready to make a careful urinalysis and estimate quantitatively what there is to be found, and I simply direct attention there. Knowing as we do that the interstitial nephritis probably exists, and with an interstitial nephritis that there is a considerable risk at times in giving morphine injections, let us be a little bit careful.

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*MEDICAL SKEPTICISM.**

By Warren B. Hill, M.D.,
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Medical skepticism is a malady that has afflicted the medical profession for a great number of years. In ancient times, and even to within the recollection of the "oldest inhabitant," medical credulity held sway. As empiricism gave way to rationalism a pronounced tendency manifested itself in the profession toward medical skepticism. All that was exact in medical science was attributed to surgery, and it, being a simpler study than internal medicine, readily adapted itself to the conditions brought about by recent investigations along the lines of bacteriology and pathology. Surgeons have always been more or less skeptical regarding the action and effects of internal medication, and it is a deplorable fact that some of the most eminent writers of our day on practice of medicine and therapeutics have distrusted the remedies which they were obliged to use. This condition has spread to such an extent among the profession at large that the interest manifested by them in therapeutics is so slight that the committee of arrangements of our State Medical Society had provided only one paper for this branch of medical science on its annual programme, while the attention of the profession is directed towards surgery, where to see is to believe.

These are lamentable facts when one takes into consideration that a large proportion of these cases coming under the observation of the practitioner are curable by internal medication, and the entire work of anatomy, physiology, pathology, etc., is but the foundation for which therapeutics should be the superstructure. Paraphrasing the Bible, Barthlow has said that the three medical graces are diagnosis, prognosis, and therapeutics, but that the greatest of these is therapeutics.

It is therefore the purpose of this paper to discover, if possible, a cause for this skepticism and to suggest a remedy. Owing to the fact that there is a tendency in a large percentage of cases toward recovery without medical interference, it is impossible for us to determine exactly the importance of drugs in the cure of disease. Idiosyncrasies and the "personal equation" are factors which circumscribe our efforts toward exactness in internal medication, but that which shakes the faith of the greatest number in drugs and sends hundreds of practitioners, both young and old, over to the side of skepticism is the unreliability of the preparations of drugs as found in the open market. There is annually placed upon our market thousands of pounds of ergot which has little or no therapeutic value, and yet we do not know enough of the chemistry of ergot to make a chemical assay for our own protection. The activity of the various samples of strophanthus varies to such an extent that Dr. Houghton, in determining the minimum fatal dose per gramme of weight, found that in fourteen samples there was a variation of .00010 to .00033 cubic centimeters, which shows that had tinctures been made of these various samples one would have been more than three times as strong as another. Of all the important drugs of materia medica, perhaps there is none more variable in its activity than cannabis indica, yet it is impossible to make a chemical assay because, while the active principle of hemp is a resin, there are other resins which are inert and inseparable from the active one.

These are a few of the difficulties in the way of procuring physiologically active drugs. If the crude drug is variable in activity, then the preparations must also be, and if we are not able to prescribe with precision we are prone to become skeptical. There is even such a variation in the activity of glucosides that one sample of strophanthin was found to possess ninety times the activity of another, yet both samples were purchased as pure strophanthin. In the light of this fact is it strange that a doctor, having used a drug with success upon a patient and subsequently, under the same conditions, found it to be

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* Read before the joint meeting of Fox River Medical Society and the Northwestern Medical Association, held at Oshkosh, Wis., Oct. 25, 1898.

absolutely worthless, should renounce drugs as feeble and uncertain remedies in the light of modern research?

The Remedy.—The remedy for this state of affairs lies in the revision of pharmaceutical methods. It is possible to have physiologically active drugs. Those whose activity is represented by chemical compounds susceptible to isolation, such as alkaloids, should be chemically assayed, and the physician using them should either procure such galenical preparations or use the alkaloid itself. Those drugs whose activity resides in the unstable compounds, such as glucosides, which are so easily decomposed as to make their isolation and chemical assay uncertain, should be tested physiologically before being placed on the market. Ergot may readily be tested by its effect upon the circulation of the combs and wattles of cocks. The activity of cannabis indica may be determined by the incoordination which it produces upon lower animals, such as dogs, while those drugs which influence blood-pressure and respiration may be tested upon lower animals by the kymograph, and other apparatus devised for that purpose.

The practice of using animals to test the physiological action of drugs is not a new one. Indeed, nearly all of the drugs which have been brought out in recent years have been tried physiologically upon the lower animals in order to determine their therapeutic value; but up to the present time there has been but little done in this direction for the purpose of determining the activity, physiologically, of drugs before putting them on the market. Most of this work has been qualitative, but since the advent of serum-therapy a quantitative assay has been made possible. All diphtheria antitoxin has been subjected to this quantitative test, and while we do not know the active ingredients of the serum, we measure its dosage in a unit of physiological activity. The same process is possible in determining the exact physiological strength of galenical products made from drugs which are not amenable to chemical assay.

In a paper read before the American Medical Association, Dr. Houghton, director of the pharmacological laboratory of Parke, Davis & Co., describes his method of standardizing tincture of strophanthus by physiological tests, which is briefly outlined as follows:

Having determined that the minimum fatal dose of tincture strophanthus will average about .0,00015 Cc. per gramme weight of frogs, when a new lot of strophanthus seed is to be tested a number of frogs of approximate weight are divided into batches of five. The first batch is injected with a minimum fatal dose of a standardized tincture, which should kill about three out of five. A tincture is now made by the customary formula of this new lot of seed, and another batch of five frogs is injected with this product. If this does not have the same effect as that of the standardized product, a second or third batch is injected until the minimum fatal dose is obtained. This is compared with the standard fatal dose and an estimate made as to the variation. A new tincture is now made, taking such variation into consideration, and a sufficient amount of the crude drug used to make the product equal to the standardized product. This is again injected into a batch of five frogs, and if the result is satisfactory, the formula used for making this tincture is used for the entire lot of the drug from which the sample has been taken. With a tincture of this kind it is possible for the physician to prescribe with a great degree of precision, and my own experience with drugs physiologically standardized has convinced me that medicine is a much more exact science than it is credited with being. This method of standardization may be employed in the manufacture of preparations of many drugs, and I believe it would be wise, in the revision of the Pharmacopœia, to have an important place given to physiological standardization of important drugs which cannot be chemically assayed.

THE THERAPY OF IRON.

By A. L. Benedict, M.D.,
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In regard to therapy with iron, there are many factors to consider, *pro* and *contra*. First of all, we must answer the arguments of those therapeutic nihilists who insist that iron, at least in inorganic combination, is not absorbed by the body and that the administration of the ordinary official salts can have no possible effect beyond preventing the elimination of iron by the body. On the face of the matter, it is apparent that those who hold this view claim either too much or too little. If we grant that iron introduced into the alimentary canal forms no part of the body, how can its mere presence in the stom-

ach and intestine prevent the elimination of iron from the tissues? We certainly know of no function of iron, either elemental or in compound, that is performed within the digestive tube. Neither is it rational to suppose that iron is eliminated from the body for the mere sake of having it appear in some of the excretions. Perhaps it is entirely a waste of time to refute this belief, which is really nothing but a half-understanding of Bunge's theory that inorganic iron in the intestine united with hydrogen sulphide and thus saved the iron in organic combination for more useful purposes. A number of experimenters have opposed their results to Bunge's, among them Honigmann, who noted the intestinal contents as they passed a fistula in the lower part of the ileum of a patient. There was no evidence of hydrogen sulphide formation—though no elaborate chemic test was made—yet only a fifth of the iron administered by mouth appeared in the feces at this point, allowing for the average amount found in food under ordinary diet. With evidence of this nature there seems to be no tenable position, except the rather optimistic one that prevails among most physicians and the hypothesis that iron absorbed from inorganic compounds administered by the mouth is speedily eliminated again without really ever having been assimilated. It is hardly necessary to point out that the assimilation of iron means the formation of hemoglobin, since in no other form does iron appear to have any function in the body or to exist except as a matter of accident.

Dr. A. Hofmann, of Zurich, has reported in the *Archiv für Path. Anat. und Physiologie, und für Klinische Medicin*, March 9, 1898, a series of experiments in regard to the absorbability of iron both in human beings and in animals. In his review of the literature of the subject it appears that Quincke in 1868 experimentally demonstrated that animals fed with inorganic iron compounds absorbed them, at least from the duodenum, and under some circumstances from the stomach and jejunum. Before this, the same view had been upheld, but not conclusively demonstrated. It may be said that all experiments of this nature depend upon the precipitation of iron in the tissues and the demonstration of a staining, either macroscopically or microscopically. With the exception of Bunge, in 1885, the various observers are in close agreement that the principal depots for iron in the body are the liver and spleen, that its elimination occurs mainly from the large intestine, slightly from the kidneys, scarcely at all from the biliary passages or the small intestine. Why Bunge alone has been thought worthy of credence is a mystery.

In six human cases in which iron had not been administered medicinally, Hofmann made careful examinations of the alimentary canal, liver, spleen, and kidneys, using ammonium sulphide as a better reagent than potassium ferrocyanide, etc., whether for naked-eye demonstration or for microchemic preparations. He found that an abundance of iron could always be found in the spleen, as would be expected from the blood-elaborating function of this organ, and especially the breaking up of senile red cells in its pulp. It is scarcely necessary to remind the readers of this paper that hemoglobin will not react like inorganic compounds of iron and that incineration is necessary to reduce it artificially to the inorganic state. The liver always contained iron, but in varying quantity. Only occasionally, and then scantily, was iron found in the intestinal walls or the kidneys. In four other cases, iron, corresponding to about six centigrammes of the element daily, had been administered for some time and up to within a day or so of death. In this series iron was demonstrated in the duodenum in considerable quantities, in the large intestine in considerably less amount; otherwise the results were the same as in the preceding cases. Microscopically, about two-thirds of the villi of the duodenum contained iron, as shown under low powers, or macroscopically by a diffuse greenish tint; under high powers iron was shown to be present by the presence of small kernels in the epithelium and larger masses within the villi, the latter being borne mostly by round cells—lymphocytes—toward the submucosa. At first sight this would seem at variance with the classical analyses of lymph of the thoracic duct, as given by Gamgee and others. But it is evident that the analysts chose cases not under iron medication, and therefore subject to only minute traces of iron. It is supposable also that the iron may be diverted from lymph-channels into blood-vessels before reaching the thoracic duct.

For the individual in health all the various chemic needs of the organism depend for their satisfaction upon the natural appetite for organic foods, with only two exceptions (not counting oxygen), the appetite for water and that for sodium chloride, the latter being

apparent in many of the lower animals, as is evidenced by the salt licks of western streams and the eagerness with which domestic animals on a farm crowd about a salt dish. With these exceptions, the fulfilment of the chemic needs of the body is rather a matter of accident. To be sure, any marked deficit of fat, carbohydrate or proteid usually soon produces a corresponding craving, but unless we consider the appetite for meat as indicating a need of hemoglobin—which is contained in muscle as well as in blood — the supply of the other mineral ingredients of the body is not regulated by appetite, and in the natural state the body must select what it needs from a relative excess of all. Anemic human beings do not, as a rule, exhibit an appetite for foods rich in iron, although animals and men who have become anemic from starvation or from deprivation of iron-containing foods, and who are not otherwise abnormal, are said to have a predilection for meat, yolk of eggs, spinach, and other foods rich in iron. The promoters of certain therapeutic preparations of iron have even described an iron hunger for these preparations mixed with milk, etc., manifested by dogs which had been purposely fed on a diet poor in iron.

As a practical point in dietetics the writer has long emphasized the importance of maintaining a fair variety, even in cases of dyspepsia, because of the practical impossibility of calculating and supplying artificially the sixteen elements normal to the body by a restricted diet. Most writers on this subject, and all who are biased by commercial considerations, think they have solved the problem of dietetics if they administer the requisite amounts of fat, carbohydrate, and proteid. Even the pictures used to advertise the merits of artificial foods for infants usually show plainly enough a fat but pale and pudgy baby in marked contrast with the leaner but harder and rosier child that has been nursed and occasionally treated to a bone to suck. One of Hofmann's series of experiments on animals clearly shows the benefits of green foods so long advocated clinically. Taking every precaution to exclude extraneous sources of iron in the construction of the cages and to remove the feces so that these could not be eaten again by the animal, a contrast was made between animals fed on gruel and those fed on green food. The latter showed a marked superiority in iron.

In order to demonstrate beyond question that the coloration of iron in the colon indicated elimination and not reabsorption—the latter theory naturally asserting itself on account of the importance attached to rectal nutrition of late years—Hofmann tried two series of experiments, the first showing that the coloration of the colon persisted after iron administration had ceased for several days, the second that it was maintained during and after iron medication by hypodermic or intravenous injection. During these experiments the duodenum — the organ *par excellence* of iron absorption when this remedy is given by the mouth—remained nearly free from traces of iron.

It will have been noted that Hofmann's experiments are contradictory to two time-honored theories regarding the physiology of iron: that it is absorbed from the stomach as a chloride or chloralbuminate, and that iron salts, like other soluble drugs, pass immediately in the portal circulation to the liver. On the other hand, they confirm the theory that, in the spleen, senile red cells are broken down, and that the hemoglobin minus the iron is eliminated as biliary pigment, while most of the iron is reused. It is perfectly possible, however, that iron is absorbed directly from the acid stomach or even from the bowel by blood-vessels. Naturally, this method of absorption would not allow such delay of iron in the wall of the alimentary canal that it could be demonstrated by color reactions after autopsy.

The writer has delayed for some time an article on the therapy of iron, hoping that some such article as Hofmann's might appear to confirm the earlier scientific experiments on the subject and the conviction of many clinicians. It is obviously impossible in the practise of medicine to demonstrate conclusively in any particular case the reality of the benefit of tonic drugs. Such medicines act slowly; they produce no conspicuous phenomena such as may be observed from the administration of even therapeutic doses of alkaloids. Iron, in particular, is essentially a food, and is always to be found both in the body and in the contents of the alimentary canal. Hence the skeptic can be convinced only by methods which are at least relatively quantitative and distinctly local. Intestinal fistulæ are rare, and those of the duodenum almost unknown. Hence it is difficult to imagine an elucidation at all comparable to Hofmann's being made on the living subject.

As to the choice of preparations of iron, the writer has never been able to observe much

difference except such as might be attributed to some complicating circumstance. In subacid dyspepsia the liquor or tincture of the chloride is particularly beneficial because of the acid present in excess. The importance of having the tincture of sufficient age to contain compound ether has not been apparent to the writer, perhaps because he has been more interested in the stomach than in the kidney. At the same time it is only fair to state that with a moderate experience in chronic Bright's disease the special virtue of this preparation and of the Basham's mixture has never been conspicuous, and the writer cannot refrain from expressing the opinion that if iron is given without reference to a possible effect upon the kidney, and some such diuretic as potassium acetate or pure water or fruit juice is administered to get the precise effect needed so far as elimination is concerned, better results will be obtained than if the attempt is made to kill two birds with one stone.

Neither does it seem wise to administer astringent salts of iron for a local effect on the alimentary canal. Such are certainly contraindicated in gastric ulcer, while for the intestine there are far better and less irritating astringents, and the iron might better be given in as mild form as possible.

The so-called pyrophosphate, the vegetable salts, reduced or powdered iron, Blaud's mass and the newer preparations supposed to represent the virtues of hemoglobin have not given discriminating results in the writer's hands. All are quite unirritating; otherwise the choice depends mainly on whether a liquid or dry preparation is desired. If it is necessary or advisable to give an organic form of iron in anemia, there is little excuse for stopping short of hemoglobin itself. In most large cities it is possible to obtain fresh blood from animals declared to be free from disease by inspection. Not very rarely it is possible to find a patient who will take the trouble to drink fresh blood and who can readily overcome the antipathy to it. But hemoglobin exists also in muscle, though only in a seventh to a twentieth of the proportion in which it is found in blood. However, including the blood that is usually present in meat, a pound of lean beef contains about seven grammes of hemoglobin, corresponding to about three centigrammes of iron. Now if a patient is in such a condition that he cannot assimilate enough iron from the ordinary ration of meat, it is not likely that he will assimilate artificially prepared imitations of hemoglobin. But it is possible that inorganic forms of iron, being enormous in amount as compared with the iron that can be introduced in food and minute as compared with the bulk of foods that contain iron, and being also aseptic and slightly antiseptic, may still be absorbed and assimilated by the organism. Scientific experiments show that this result is perfectly possible. Even in the diseased human system clinical experience shows that it actually takes place, though not in every case in which it is desired.

As to the albuminates and peptonates of iron, it must be apparent that any mineral salt of iron given on a full stomach will form some such compound, while there is no preparation more palatable and more elegant than the albuminate formed by adding a ferric salt to egg-water or milk — omitting, of course, any allusion to the aromatics, sugar, etc., with which commercial products are usually combined.

It has been claimed that the treatment of anemia with iron is superficial and that the truly scientific treatment consists in administering a potassium compound, with or without iron, since in anemia the blood tends to become less alkaline than normal, and especially on account of the deficit of potassium. This claim is true, if the potassium dosage depends on an accurate estimation of the lack of potassium and of alkalinity in the blood. If, on the other hand, as is often the case, it means only that the physician gives Blaud's pill or some similar preparation as a matter of routine, what has been called science is nothing but a fad. Here again the writer would like to emphasize the need of giving green foods and to call attention to Bouchard's experiments in regard to "autointoxication," which show the danger of potassium in excess.

The key-note of successful iron therapy is to recognize that this drug is a food, and that if it is not absorbed and assimilated from an ordinary ration the trouble lies essentially with the body and, according to Hofmann, with the duodenum. This statement might seem inconsistent with others made in this article, and, indeed, it is only our relative ignorance that justifies the administration of iron as a drug at all. But we have plenty of precedent for such administration. Thus, when we cannot make the stomach secrete enough hydrochloric acid we administer the chemical; we even give bile instead of stimulating its formation in the

body. Unfortunately, we sometimes give it when there is already too much of the biliary constituents in the system. Caffeine is only a slight modification of xanthine, which is normally formed during the catabolism of nuclear tissue. If the body cannot assimilate fats we administer the nastiest oil that human ingenuity has devised, and even claim special virtues for it. Thus we are fully justified in administering iron as a medicine, but we must recognize the fact that as soon as we understand and can remedy the fundamental causes of iron deficit we shall sweep all the preparations of iron out of the Pharmacopœia. Whether we can actually reach this point in practice is by no means certain, but we must regard the anemic patient as having a special form of indigestion or of malassimilation in regard to iron.

There are two significant clinical facts which receive added significance from Hofmann's localization of iron absorption in the duodenum. First, it has long been known that whenever a patient lacked some special food, like fat, or iron, or carbohydrate, he was rather apt to be injured by forcing the administration of that substance. This is particularly the case in diabetes, and while persons who need fat are not usually seriously injured by the attempt to increase its absorption, the fact remains that the more a person needs fat the more obstinately does his system refuse to accept it. Secondly, anemic patients usually present some one of a number of conditions which may be considered as interfering with the function of iron absorption by the duodenum. Hyperchlorhydria sometimes exists, and we may assume as a hypothesis—it is nothing more—that the irritation of superacid chyme flowing over the duodenum inhibits its function. Subacidity would have a similar effect from allowing malfermentation or even putrefaction in the stomach. Ischochymia from any cause would have, ultimately, the same action. Catarrh about the bile-duct or a disturbance of biliary secretion would act locally on the very part of the duodenum which Hofmann has identified with the absorption of iron. Hitherto we have supposed that dyspepsia interfered with absorption of iron because the latter function belonged to the stomach, but this does not apply to anemia with hyperchlorhydria in the absence of hemorrhages. As to the liver, if Hofmann's conclusion is correct, we must have confused cause and effect, and we ought now to modify our conception by assuming, not that the liver is injured by iron carried to it from the stomach and intestine, but that the hepatic, or rather biliary, disturbance prevents the absorption of iron, possibly by what is largely a merely chemic precipitation by biliary acids. Of course, there is nothing in the newer theory to prevent a continuance in the belief that iron may exert an unfavorable local influence on the intestine. But if our premises be correct, we have an indication which the writer intends to carry into practise, of using iron hypodermically, when it is not well borne or is not efficient during administration by the mouth.

From the entire study of the subject it appears that we cannot hope, in the case of the kidney, to secure a local therapeutic effect from the use of iron, any more than we need fear such effect in the case of the liver.

It seems to the writer irrational to administer iron medicinally without carrying on routine blood examinations to determine whether the particular preparation is doing good in the individual case. On the whole, the simplest way to determine this point is by means of the hematokrit. Counting the red cells answers about the same purpose, but it is more tedious, and we are more interested in volume than in number. To be thoroughly logical, we ought to estimate the amount of hemoglobin, but there is, as yet, no clinical method which is reliable. Colorimetry is notoriously inexact and is being abandoned for approximation by specific gravity. But more careful studies of this method show that it contains many fallacies both of technique and of intrinsic nature. Men who object that the hematokrit does not apply to the point in question, but to the volume of cells only, will use an ordinary urinometer for taking specific gravity of a benzol chloroform solution, will neglect to make correction for variation of temperature, will overlook the fact that this mixture evaporates so rapidly and so unequally that it cannot be weighed in an ordinary accurate balance because the weight changes more quickly than the proper weights can be selected, will overlook also recent German studies which show that specific gravity is a function of several variables, including the number of red and of white cells. The writer hopes to obtain practical results from the direct estimation of iron in the blood without subjecting the patient to more than slight bleeding. But as yet this method is not on a clinical basis.

It has often been proposed to use substitutes for iron which are not normal constituents of the body. The chief drugs used in this way are manganese and arsenic. Most clinicians will agree with the writer that the former is practically worthless, and it is gratifying to note that microchemic investigation of the intestine fails to demonstrate that this drug has any influence on the absorption of iron, while there has never been a demonstration that it took the place of iron in the system. With arsenic, clinical results are very different. Indeed, one might perpetrate the aphorism that when iron is needed arsenic is indicated, and often iron is contraindicated. Yet arsenic is distinctly a poison and not capable of taking the place of any normal constituent of the body. The writer would explain the paradox as follows: The cases in which arsenic is of especial value are those of chlorosis and of somewhat similar nature, in which there is a failure of general innervation or supply of nerve power, and in which there is a deficiency of hydrochloric acid secretion, with corresponding increase of germ and yeast fermentation. Often the "enterohepatic circulation" (down through the bile passages and intestine and up through the mesenteric and portal veins) drags back with it ptomaines and other toxic substances from the bowel. Now arsenic seems to be directly a tonic to the central nervous system, though how we do not know, and it is an excellent antiseptic. The latter action is, undoubtedly, the principal reason why arsenic allows the body to avail itself of iron present in the food which would otherwise not be absorbed. Some may ask why, if the main action of arsenic is as an antiseptic, some other antiseptic may not act as well. The writer's answer is that several do act quite as well, except for the apparent nervine effect. Salol, salacetol, peppermint, wintergreen, or if there is diarrhea, a bismuth antiseptic like the salicylate, subgallate or eudoxine, even lavage or a diet which reduces fermentation, may act very much like arsenic. Indeed, it has seemed to the writer that the value of arsenic in skin affections, especially those like acne, urticaria, and some erythemata which are due to autointoxication from the gastroenteric tract, depends very largely on its action as a gastroenteric antiseptic. Arsenic should be given with considerable caution, for, unlike iron, it is eliminated to a considerable degree by the kidneys, where its local effect is dangerous. It happened during the writer's service as interne that a patient developed albuminuria while in the hospital, and the case progressed to a fatal termination from nephritis. As the urine had been several times examined and found normal, careful search was made for a cause. It was then discovered that the patient had been taking arsenic for some weeks, without the knowledge of the attendants. Both visiting physician and interne had been changed within a short time, and through a failure to make proper memoranda arsenic had been continued unduly.

THE MEDICAL TREATMENT OF APPENDICITIS

By Herman B. Allyn, M.D.,
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The purpose of the present paper is not to discuss the various remedies and measures which have been recommended for the medical treatment of appendicitis, but to describe, as briefly as clearness will permit, a plan of treatment which I have followed with very satisfactory results for the past three years. This plan consists essentially in absolute rest in bed; in abstinence from food for twenty-four to forty-eight hours; in opening the bowels, preferably by a saline laxative, and in keeping them open to the extent of one or two movements in twenty-four hours.

In common with the great majority of physicians who have been graduated in the last fifteen years, I was taught to use opium in appendicitis, and to use it for its twofold action in lessening peristalsis of the intestine and in controlling pain. I treated cases of appendicitis in that way for a number of years, and have spent many anxious hours in watching over cases, fearful lest they might die, and considering the propriety of a surgical operation. Since opium has been discarded and laxatives employed, the cases have caused me far less anxiety, because there has been less pain, less fever, less tympany and vomiting, and less toxemia as a whole. Moreover, the duration of the illness has been, on the average, shorter.

During the past three years I have had fifteen cases of appendicitis in private practice; all have recovered without operation while under my care. I do not include in this list one case of combined salpingitis and appendicitis, in which disease of the appendix was probably the cause of the disease of the tube, because the disease of the appendix

was discovered only at the abdominal section. The patient made a complete recovery. Nor is any case of doubtful diagnosis, or one remaining still under treatment, included. One case in which an operation was performed after I ceased to be the attending physician is, however, included.

The plan of treatment adopted in these cases was very simple. The patient was put to bed and kept as nearly at absolute rest as the circumstances of the patient and domestic conditions permitted. All food was withheld for twenty-four to forty-eight hours, and water, or some carbonated water, or hot water, allowed very sparingly. By the mouth some laxative was given, preferably a saturated solution of Epsom salt in peppermint water. This is given in teaspoonful doses once in three hours, until one or two movements in twenty-four hours are obtained. In a few instances half an ounce or an ounce of castor oil was given for a single dose, at the beginning of an attack. When the stomach was too irritable to retain the Epsom salt, calomel in divided doses was ordered until the bowels moved once or twice. Occasionally citrate of magnesia is preferable. Neither opium nor morphine hypodermically was given for the pain. In nearly every instance pain subsided when once the bowels had been freely moved, and food had been abstained from. In rare instances codeine was given after the bowels had been moved; but while I am sure that its effects are less depressing and objectionable than those of morphine, I am not so sure that the patient was the better for it. Nevertheless, if an anodyne is to be given in this disease, it should be given after the bowels have been opened. Food was returned to cautiously, a tablespoonful of milk and lime-water once in two or three hours, or what is preferable, a small quantity of beef juice or one of the animal broths, being allowed.

The same methods which have been found useful in the treatment of acute intestinal toxemia in infants are useful in the treatment of many of the cases of appendicitis. This is especially true of the period after the acute symptoms have subsided, and the patient is to be protected by a carefully regulated diet against a recurrence. Pain usually ceases to be a symptom demanding treatment when the bowels are moved once or twice a day; but until that time local measures to relieve pain are very useful. Such agents are turpentine stupes, the hot-water bag covered with a wet piece of flannel, ice, and leeches.

I am well aware that the great weight of medical authority is in favor of the use of opium and against the use of salines in the treatment of appendicitis; though the opium treatment has ceased to be the almost universal practice it was a few years ago. We owe this change of view very largely to the influence of surgeons, who have objected to the use of opium in appendicitis because it masks the symptoms of the disease and may thus deceive them. A more important objection still is that opium aggravates any toxemia that may exist, thus increasing tympany, vomiting, and fever.

The great objection to the use of laxatives in appendicitis has been the fear lest the peristalsis which they cause may occasion perforation of the inflamed appendix, or exchange a local for a general peritonitis. I cannot say there is no danger of this, but I believe that the danger is exaggerated. On the other hand, in considering too exclusively the possibility of perforation of the appendix physicians have failed to appreciate the bearing of certain obvious facts. In the first place, appendicitis in most instances is not primary, but results from, or is a part of, catarrh of the colon, or fecal accumulation therein; and that an overdistended appendix with occlusion of its mouth will empty itself most readily if the colon is itself empty or nearly empty. Again, the nausea, vomiting, tympany, chills and fever are not, in the great majority of instances, the result of local or general inflammation, but are toxic symptoms, the result of absorption into the general circulation of certain poisons produced at the seat of inflammation or in the neighboring intestine. I believe it is by lessening the general toxemia through elimination of the toxins that laxatives do good in appendicitis. But whatever the explanation may be, in cases treated with laxatives and without opium I have seen less nausea, vomiting, tympany, and fever, and the cases appear to run a shorter course.

Purgation is not necessary. If the bowels are constipated when the patient is first seen, an enema should be given, and then some laxative, preferably Epsom salt, given by the mouth until the bowels are freely moved. Thereafter only sufficient should be administered to secure one or two movements daily.

In speaking of the medical treatment of appendicitis, I do not, of course, mean to imply that the services of a surgeon are not needed. On the contrary many cases are

surgical from the very beginning. My own rule has been to call a surgeon in all doubtful cases. A case in my judgment is doubtful if within twenty-four hours after the patient is seen, or after the bowels have been sufficiently moved, there has not been a decided improvement in respect of pain, vomiting, and fever. In such a case perforation may exist.

But even the most enthusiastic advocates of operation decline to operate in certain cases. I very well remember on one occasion calling a surgeon in consultation over a case of appendicitis. There was extensive tympany, but only slight fever and a pulse under 100. The aspect of the patient was, however, bad, and the surgeon declined to operate then, believing that if the abdomen were opened the patient would go into collapse and die on the table. He advised the use of Epsom salt until the bowels were freely moved. This suggestion was carried out, and in twelve hours the patient was so much better that it was decided to wait still longer before operation. To make the story short, the patient fully recovered, and then declined operation, until another attack made him again change his mind. It may appear to others as it seemed to me, that if the moderate use of salines will rescue a patient who is deemed so far gone by a surgeon that he would not survive an operation, it should also be a good treatment for milder cases in which the question of operation is never urgent.

AN OPERATION FOR THE CORRECTION OF BADLY UNITED FRACTURE.

By Gwilym G. Davis, M.D.,
Philadelphia.

The patient, a boy aged thirteen years, was referred to me by Dr. Eckman for treatment. Several years ago his left leg had been broken above the ankle and had united at a marked angle. By a recent fall this angle of union had been fractured, and as this necessarily entailed the patient remaining off his feet, it was thought that the opportunity might well be utilized in straightening the limb. It had been broken at the age of eight years by a fall on the sidewalk. He was then treated at one of our prominent hospitals, first with a fracture box and later with plaster of Paris. On removal of the plaster cast the deformity was apparent. He then again entered the hospital, and the leg was rebroken and redressed. After the removal of the dressings for the second time the leg again became deformed.

For the next three years the patient walked about on crutches, when he entered another hospital. The leg was here operated on twice, but the deformity recurred. For the past year and a half he has been walking with crutches, but recently while using a cane he fell and fractured the angle of union.

On examining the limb the deformity was seen to be marked. The seat of the original fracture was at the junction of the lower and middle thirds of the leg. Fig. 1 shows a side view. It is here seen that the two fragments have become united at an angle of forty-five degrees. Viewed from the front the deformity is seen to be just as bad in a lateral direction as in the anteroposterior one (see Fig. 2). The part below the seat of fracture points inward to the extent of forty-five degrees from the straight line of the leg.

Fig. 1.

Fig. 2.

To remedy the trouble the following procedure was undertaken: An incision was made on the anterior surface of the leg directly over the apex of the deformity. The bone having been exposed, the soft parts were pushed back and a wedge shaped piece of bone was removed from the tibia. Sufficient was taken out to allow of a slight overcorrection. The divided ends of the tibia were then joined by two sutures of very thick silver wire, the ends coming through

the wound. A short incision was next made on the outside of the leg, over the fibula; this bone was likewise resected and wired with thick silver wire. Owing to the lower fragment of the fibula being fastened in its changed position, it was found impossible to bring it entirely in line with the rest of the bone. Healing took place kindly, the foot and leg being retained in the meantime in a plain tin right-angled splint. The wire sutures were left in about eight weeks and then removed.

It was found that union of the divided bone had not occurred at the site of resection. To hasten its accomplishment and prevent the reproduction of the deformity, the brace shown in Fig. 3 was applied. It

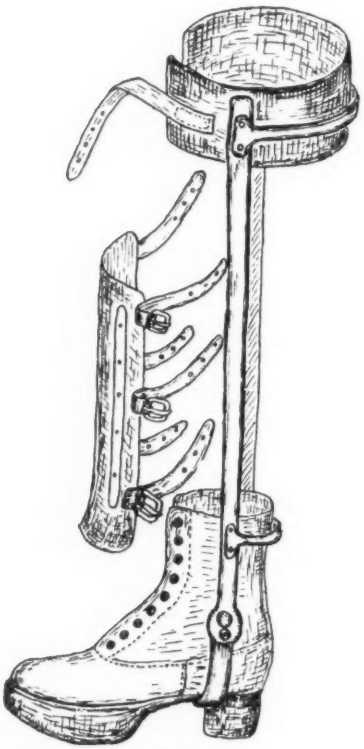

FIG. 3.

consists of two side irons fastened to a steel sole plate in a high shoe, and a sole-leather plate for the front of the leg. The ankle-joints of the apparatus were locked by means of a screw placed just below the joint bolt. A piece of sole-leather, strengthened by a couple of strips of steel, was fitted to the front of the leg and fastened by straps to the side irons. This reached from the instep to well up the leg and prevented the leg again bending forward at the site of injury. The ultimate result is shown in Fig. 4.

The interest in cases such as this lies in investigating the causes of the previous failures in treatment and then devising means to avoid them and bring the treatment of the case to a successful end.

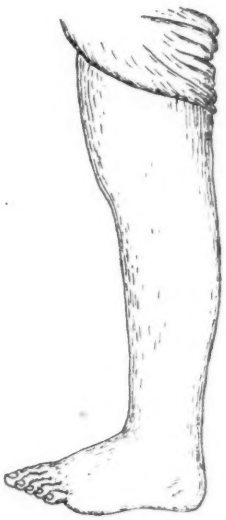

FIG. 4.

The deformity here shown is that which, though in a less degree, most commonly follows fracture of the leg. The heel is drawn up by the tendo Achillis; the foot drops backward, and consequently the anterior extremity of the upper fragment protrudes.

The probable cause of failure of the previous efforts at correction was that the ends of the bone were not brought properly together and kept there until firm union had occurred. Fractures in this location are usually oblique in character, the line running upward, inward, and backward. Many show a tendency for the lower end of the upper fragment to project forward. This is to be met by applying Buck's adhesive plaster extension to the lower fragment, the leg resting in a fracture box. Three pounds so applied is sufficient. It may be supplemented by division of the tendo Achillis, or a small shot- or sand-bag may be laid over the projecting end of the upper fragment.

The bad results often seen from fractures in this region convince me that the profession generally does not appreciate their importance, or else is unable to apply an efficacious dressing. No pressure should be placed on the leg for six, eight or even more weeks

after the accident. The pressure of the weight of the body causes the recently formed callus to yield, and the line of fracture being oblique the fragments begin to slide over one another, and deformity that at first was hardly perceptible becomes, as in this case, very marked. It is to avoid this tendency to overlapping that the ends of the bone in operating are cut square across. Bony union is desired and aimed at, but it may not occur. In this patient it did not occur directly after any of the operations.

It is not necessary to keep the patient abed while waiting for bony union, but it is positively necessary to keep the leg from bending forward at the site of the operation and thereby reproducing the deformity. In this case the greatest efforts were directed to this end. At the time of operation it was found impossible to so extend the foot at the ankle-joint as to make it stand at right angles to the leg. If an attempt had been made to bandage the foot firmly to the foot-piece of the splint it would only have tended to tilt the lower fragment forward and reproduce the original deformity. Therefore, while the foot was left to a considerable extent loose in the splint, the greatest care was taken to keep the tibia absolutely straight. Even after the wires had been removed union was not firm, although the leg was straight. The brace here used was fastened to a high shoe. The various operations which the patient had undergone had shortened the leg. The ankle-joints were made immovable because it was desired to prevent the foot from flexing on the leg, as seen in Fig. 1. The tendency of the leg to bend forward at the seat of fracture was counteracted by placing a thick pad of gauze over the seat of the wound and anterior part of the leg, and then firmly strapping the leather splint on the front, the leather straps being passed around the two side irons. The use of some such apparatus is absolutely essential to the successful treatment of many of these cases.

True bony union was not complete in this case until nearly a year after the time of operation. The eventual result achieved is shown in Fig. 4, taken nearly two years after the operation.

Much depends on the thoroughness with which the bones are joined together. Catgut is entirely too insecure, and my preference is for an annealed silver wire one-sixteenth inch thick. After using the brace for a while the screws locking the ankle-joints are removed and bending of the ankle allowed.

*ERRORS IN THERAPEUTICS.**

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

When casting about for some topic which would be interesting and worthy of presentation to your Society, I have come to the decision that I will serve you best if, instead of discussing a single theme during the time given me, I take up several topics which are of more or less interest to every one of us, be his practice what it may; for we are met together in order that by comparing views we may gain information which will prove of value in our daily rounds. Often it is as well to take a view of what has been done as to attempt to find our way into new fields in which the paths have not been well enough trodden to be safely followed.

With your permission, then, I shall ask your attention first to a consideration of the value of the iodide of potassium or sodium in the management of cases of chronic renal disease. Aside from the mere empirical use of an iodine compound we must discover whether its employment can be based on rational grounds, then determine how it may do good, and finally consider whether conditions may exist in which it can do harm.

It is manifest at the start that we must separate the parenchymatous nephritis from the interstitial type, for the two states are pathologically and symptomatically widely at variance.

Taking the interstitial variety first, we find that there are three indications to be met in the care of patients suffering from this disease, namely, to diminish the call upon the excretory power of the kidney, to lower arterial pressure and thus relieve strain upon the heart, and finally to treat complicating states which cause the patient to be in danger or distress. It is evident that the iodides do not decrease but rather increase the excretory work of the kidneys, and this being the case, is there any reason to suppose that the iodides can be of any value so far as any direct influence upon the renal lesion is concerned? An examination of the lesions found will, I think, bring forth a negative reply from the most enthusiastic therapeutist. Whether we believe in the old theory that the increased growth of the connective tissue causes pressure on the parenchyma

* Part of the Address in Medicine before the eightieth anniversary of Cumberland County Medical Society of New Jersey, December, 1898.

with resulting wasting of this part of the kidney, or whether we adhere to the newer pathological view, which is probably correct, that the overgrowth of connective tissue is a secondary process, long experience tells us that connective tissue already formed, particularly if its formation has been gradual and definite, is not capable of absorption or material modification by any treatment we can institute; and the older the patient the more certain is this view. As interstitial nephritis is a disease of advanced life regenerative changes are impossible. So far, then, as a causative agent, in the sense that existing damage can be repaired, we can cast the iodides aside. To quote from Furbringer's essay, we know of no specific drug capable of arresting the process of contraction. He agrees with Cantani that the iodides are without effect unless the nephritis is syphilitic in character, and that their use simply tends to produce dyspepsia and headache.

When we turn to the side of preventive medicine the aspect of the case is quite different, for while chronic interstitial nephritis is an insidious malady, it is after all but a manifestation of a number of conditions associated with general or local conditions of perverted nutrition and metabolism, and the iodide by exercising an influence upon cell growth which we call alterative so modifies the abnormal state that the exciting cause of renal change is put aside or held in abeyance. We find, therefore, that the iodine compounds can only be expected to help the patient when it is clear that by their use we can remove the cause of the renal change. Under what circumstances can this result be expected? To take up the least frequent cause, we find that in that form due to lead the iodides so aid in the elimination of the poison from the body that they exercise a very powerful effect for good aside from any alterative function. So, too, in syphilis the direct influence of the drug upon the course of the disease renders it of great value to prevent further evil changes. In the chronic renal and vascular changes due to lithemia and gout they are also of value, since they are known to modify the severity of these dyscrasias; but in a very much larger class of patients these causes are not active, and the cirrhotic process seems to be a degenerative change due to old age, which may be reached at an unusually early period of life. Of how much value are the iodides in this class in which we know not what is the real proximate cause, and to which we cannot direct the use of the iodide with any clear idea of its possible action? I believe very little good can come directly from its employment, for I do not know of any researches that show the iodide to exercise an inhibitory influence on a cirrhotic process produced, unless it is produced by a cause relieved by the iodide. What, then, shall we decide as to the use of the iodides in renal cirrhosis? The answer would seem to be that they should be employed because of their specific power in some cases, as those due to lead, syphilis, and gout, and on general principles in those cases in which these factors are not manifest either because they are obscure or because by their influence they lower arterial pressure and so relieve the heart of the burden of working against a great *vis a poute*, causing a simultaneous decrease in the symptoms of headache, dizziness, or vertigo.

Having found that there are good reasons for the use of the iodides, are there any reasons which will make it unwise to employ them in interstitial nephritis? The reply to this question depends to a great extent upon the dose which is employed and preparation used, because if very large doses of the potassium salt are given we get a powerful influence along with the effect of the iodine. It is not generally recognized that potassium is a powerful depressant poison which is largely eliminated by the kidneys, and which is therefore retained in the body in a malady like that we are discussing owing to the impaired function of the kidney. In many of these cases marked degenerative changes are present in the heart muscle, and the potassium still further depresses this feeble viscus. The use of the iodide of potassium should therefore be cautious and in small dose in interstitial nephritis, and the same rule applies in less degree to the iodide of sodium and strontium. What remedy of a distinctly alterative type may then be more freely used? The reply to this is that the protiodide of mercury and the bichloride are more useful and less dangerous, since they do not exercise a general depressant influence over the heart muscle or the body protoplasm in general, nor do they load the body with a large amount of inorganic material which must be eliminated.

Finally, let me reiterate the fact that the iodides when used in cirrhotic states due to syphilis only act as prophylactics against the further progress of the malady and in no way clear up the results already produced.

In regard to chronic parenchymatous neph-

ritis it is, I think, a fairly well decided point in medicine that the iodides are not only valueless but harmful. The renal lesion is not one in which the action of one alterative can be of much service; the glandular apparatus is so diseased that the iodine and potassium are not eliminated, and the former drug may produce renal irritation in the still active secreting portions of the kidney and so speedily produce fatal conditions. In reply to a question as to the wisdom of using the iodide, Dr. Tyson replied to me that he thought it necessary to use great caution in cases of the parenchymatous form, in which a hypersensitiveness to this drug often exists. In other words, the underlying causes of chronic parenchymatous nephritis and the pathological process itself are such that the action of an iodine compound cannot be advantageous.

There are two other remedies which are abused in renal disease, namely, iron and opium, which have become popular probably because we have recognized that we are face to face with an incurable disease and grasp at straws in the hope of saving the drowning man. On the other hand, we know that in many cases by proper treatment we can so modify the course of the malady and control its symptoms that life may be greatly prolonged. Here again we must separate the two general types of kidney disease if we are to obtain clear ideas of the effects of iron.

In interstitial nephritis there is no reason why this drug should be given except in rare instances, for it has no direct renal influence, and whatever advantage follows its use is to combat anemia, a condition not well developed in most cases of interstitial disease. Further, it increases the headache, so often a pronounced symptom of high arterial pressure, disorders the digestion, and accumulating in the body acts as a burden upon the tissues. It should not be used unless there is a distinct reason for its employment.

Even in the parenchymatous form of renal disease its use is far more limited than is generally understood, for here again it cannot influence the pathological process in the kidney. In other words, as a result of the toxic matters which accumulate in the blood in this malady degenerative changes take place in it and anemia develops, and this anemia may be well combated with iron; but beyond the relief which it may render in part to the anemia, there is no evidence that it exercises any effect of value on the kidney itself. Further, there are cases of parenchymatous nephritis in which anemia of any degree is not present and yet in which iron is prescribed. In other words, by a curious process of transition the profession has mentally transferred the value of iron from the effect to the cause, or in other words used a remedy for a symptom as a remedy for a disease. Not only is this a scientific mistake, but it is a practical blunder, since iron is often deleterious in its effects in these patients. As we all know, it tends to cause constipation, a condition the reverse of that desired in a body which needs active bowel movement to aid in the elimination of poisons. If constipation exists fluids which should be passed out by the body go to aid in the production of dropsical effusions. Again, iron often causes headache of a congestive type or other signs of cerebral congestion, and this state is also the antithesis of that desired in renal disease. Finally, it tends to produce a disordered digestion, and is only needed in the body in minute quantities, there being but thirty-two grains of iron in the entire body, whereas as much as this is often prescribed in a few days.

The subject has been well discussed by Dr. Tyson in one of his recent papers, and he has done a service in directing attention to a subject in which the profession have been guilty of rank empiricism. I may well be asked why it is that this drug has attained such a wide-spread use in practise if so little can be said in its favor, and why it is that some of my audience have seen benefit credited to the iron. This is proved by the fact that iron is nearly always given in the form of the liquor ferri et ammonii acetatis, and it is the acetate of ammonium rather than the iron which produces the diuretic influence which we seek in this disease when the urine is scanty. There may be cases needing iron. If so, why not give it, to use a pharmacopœial phrase, in a more elegant and agreeable form instead of this bulky liquid, and if a diuretic is needed why not employ some diuretic which is more certain and active? Among French clinicians the sugar of milk in drachm doses is used, and while others give caffeine or its cousin theobromine, some give digitalis. For many years irregular and regular practitioners have used another drug which has not attained the reputation in this part of the United States that it deserves, namely, *Apocynum cannabinum*, or as Rush called it, the "vegetable trocar." One reason for this has been the fact that confusion as to the real Apocynum

has existed even among pharmacists, and *Apocynum androsæmifolium* has often been dispensed with no results or only harmful ones. There is no doubt that in the scanty urinary flow of this form of renal disease with dropsy this drug, in the dose of five drops of the fluid extract three times a day, gives very extraordinary results in relieving dropsical effusions.

There is another drug which is constantly given in nephritis without clear ideas as to its exact effects, namely, opium. Its use in ordinary forms of renal disease without cerebral or nervous symptoms is certainly not necessary and leads again to the retention in the body of effete materials which should be eliminated. When we come to consider its use in convulsive uremia we find contradictory evidence concerning it, some asserting that it is a very useful drug and others that it is worse than useless. One of the strongest upholders of its value in uremic convulsions was Loomis, but he was careful to limit its use to the uremia of acute nephritis and did not commend its employment in the uremia of chronic nephritis. This is a fact not generally known. One can understand that a drug might act well as a nervous sedative in a condition in which a poison had produced acute nervous excitement, and fail to so act in a state in which nervous excitement was only a result of prolonged intoxication. In the latter cases opium would seem to be a dangerous drug. It must be evident to those who have seen different cases of uremia that the symptoms arise from different poisons. Sometimes these poisons cause stupor without spasm, in other instances they produce violent convulsions because the cerebral cells are primarily diseased, or because the poison in one case is irritating and in another sedative, and therefore opium might be useful in one case and harmful in another. These facts have been well dealt with in the paper by Tyson which I have quoted. Speaking of interstitial nephritis, he says: "I regard the use of morphine in such cases as harmful in the extreme, and its hypodermic injection should be positively forbidden. It causes a decreased urinary flow, suppression, coma, and death. This is particularly true of old persons."

Not long since I asked the following question of several well known practitioners: Have you found that the existence of chronic parenchymatous or chronic interstitial nephritis renders it necessary to use caution in the use of opiates? To this question Dr. Tyson answered, "Yes, especially chronic interstitial nephritis." Dr. Da Costa says, "Yes, I share the common opinion that it necessitates caution;" and Dr. Musser, "Yes, particularly if there is an associated pulmonary complication, as congestion, pneumonia, or bronchitis, and very necessary if the tendency of intercurrent process is to lead to dilatation of the heart and secondary renal congestion." Further, Wood tells us that his own belief is that whenever the kidneys are seriously diseased the physician should be exceedingly careful in the administration of opiates, because the chief channel through which these are eliminated is choked up. Still more recently, however, Ringer has urged the use of morphine in uremic spasm.

Here again I fail to see any possible benefit to be derived from opium that cannot be obtained by the use of other drugs more directly anticonvulsive and less stuporous in their effects, such for example as chloral and the bromides, and for the convulsion itself either by the mouth in full dose, or by inhalation, or hypodermically, since it will act as a venous sedative and is said to have a peculiarly beneficial effect in uremia. Nor should the great value of injecting normal saline solution into the veins or the subcutaneous tissues be forgotten. Of this I have already written in several addresses.

Finally, a word as to pilocarpine in uremia. Originally heralded as a remedy for uremia, it has at last fallen into deserved disuse, for while it sweats the patient it lowers circulatory integrity and so indirectly aids in producing that most to be dreaded complication, pulmonary edema. Further, it also tends to fill the bronchial tubes and all the air-passages with liquid secretion, and so hastens the increasing dyspnea and cyanosis. I believe that pilocarpine is contraindicated in uremia as a rule, and absolutely harmful in any case in which the heart is impaired or the lungs not normal; and what cases of uremia are lacking in these two objections? In eclampsia, which is after all a form of uremia, obstetricians seem as a unit against its use.

Perhaps the thought has entered your minds before this that this is a curious occasion, in that a professor of therapeutics in a great school is hurling denunciation at well recognized therapeutic practices and posing as a therapeutic nihilist; but this he is not doing. A good hunter is one who knows when and where to shoot, and a careful physician knows when to use certain remedies and when to avoid them.

The Therapeutic Gazette

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Leading Articles.

THE PERVERTED INTENT OF PATENT LAW.

The American people are wont to consider that in practically every respect they are in advance of their more unfortunate brethren who are thought to suffer from a monarchical or paternal form of government, and they believe that by legislating for themselves they obtain the best results. In some respects, however, they fail to receive certain benefits which accrue to those who are subjected to more paternal laws, and in no instance is this more noteworthy than in the case of drugs which are made under patents and which are sold in this country at prices far in excess of their real worth. The October number of the *Bulletin of Pharmacy* contained an interesting editorial dealing with this important matter. Few physicians and none of the laity are aware of the fact that phenacetine sells in Canada at 25 cents per ounce, but for $1 in the United States; that sulphonal sells in Canada for 20 cents and for $1.35 in the United States; and that trional sells in Canada for 90 cents and at $1.50 in the United States. These are but a few of a large number of synthetic chemicals which are sold throughout the length and breadth of the land at similar rates. The question at once arises, why is it that such enormous prices, far above any justification, can be imposed upon the American people? and the reply is that we have such patent laws as are not permitted to exist in Germany, France, England, and Canada. In those countries the law is such that no exclusive monopoly in a remedial substance is possible, and in Germany in particular it is not possible to patent a food or a medicine, but only the process by which it is manufactured, the result being that others can frequently prepare these substances by other processes, and thereby two results are obtained: first, extortion is avoided, and second, chemical investigation is stimulated. In the United States, on the other hand, we grant (*a*) a patent on the process, (*b*) on the substance itself—that is to say, on its chemical composition—and (*c*) we allow the name to be registered, thereby rendering the name the exclusive property of the manufacturer for all time, even though his patent may expire. So strict is the American law that the same product may not be manufactured by a different process even though offered for sale under a different name.

Action has recently been taken by the American Pharmaceutical Association looking towards the revision of the law dealing with these products, and the President of the United States has recently appointed a commission composed of the assistant commissioner of patents at Washington, Mr. Arthur Greely, Judge Peter Grosscup of Chicago, and Mr. Francis Forbes of New York City. We would suggest to our readers that through their representatives in Congress or by direct communication they impress upon the Commission the necessity of revising patent legislation. It is a monstrous wrong that substances capable of so much good can only be obtained at such outrageous prices, far in excess of the reward due to their inventors or manufacturers. Such profits should be prevented by laws as strict as those which forbid rates of usurious interest.

THE ERUPTIONS PRODUCED BY CHLORAL.

In addition to the nausea, vomiting and purging produced by chloral in some patients through its irritative action upon the stom-

ach, and in addition to the coryza which it occasionally produces, chloral is capable of causing other effects, aside from any depressant influence which it may exercise upon the circulatory and respiratory systems. Within the last two years we have called attention in these pages to the frequency with which drugs produce lesions in the skin, the cause of which is frequently not recognized, and these lesions are therefore very obstinate under ordinary treatment until by chance the use of the drug which is causing them is stopped. In this connection we may call attention to an interesting paper which has recently been published by Labadie-Lagrave, of Paris. In the first of his cases a girl of seventeen without any antecedents of note was seized with fever, sore throat, and an eruption upon the arms of a diffuse red character, with tiny punctated marks. The diagnosis was that the patient was suffering from scarlet fever, and the condition of the tongue was thought to be characteristic of this disease. The tonsils were covered by a gray, gangrenous-looking exudate. There was no albuminuria in the urine and the lungs were clear. The diagnosis was that of ordinary scarlet fever with gangrenous tonsillitis. The temperature curve was of ordinary scarlet fever. Two days after the patient was seen the eruption faded and the temperature fell by lysis. Frequent applications of antiseptics were made to the buccal mucous membrane of a lotion of salol and camphor, and to the skin chloralized vaselin was applied. After this treatment had been continued for a considerable period of time, desquamation of the skin having been persistent, although it was limited by the use of the chloralized vaselin, the temperature suddenly rose several degrees, and at the same time a curious rose rash developed upon the upper and anterior portions of the thorax and in the dorsolumbar region. This eruption was accompanied by a disagreeable sensation in the skin, and finally was followed by little papules which were surrounded by a red areola. Labadie-Lagrave believes that this secondary eruption was due to the chloral applications. In a second case in which chloral was applied locally similar symptoms were developed, namely, an erythematous rash, characterized afterwards by a papular eruption.

It is true that in these instances the eruption occurred from the local application of the chloral rather than by its internal use, but that eruptions do occur when chloral is used either internally or externally is well known. They have been reported by Schüle, Fuller, Brown, Mayer, Martinette, and Curran, and in America by Dr. Morrow in his well known book on "Drug Eruptions." Chapon in a Paris thesis of 1894 described such a condition.

Mason recorded three cases of measley eruption which lasted three or four days, and Burham has noted scarlatiniform eruptions after the use of chloral. In Brown's cases curious red patches appeared over the malar bones, and across the bridge of the nose. Mercier has seen an urticarial rash, and if a large amount of literature were to be searched it would be found that chloral has been shown to produce almost every variety of lesion of the skin which is not dependent upon an infection and a microorganism.

Two theories have been advanced to explain these eruptions. One is that the drug produces an angioneurosis or vasoparalysis, probably by an action on the vasomotor centers. The other theory is that some of the chloral is eliminated by the glands of the skin, and in its elimination produces local irritation. According to Aviragnet these eruptions may be divided into two great classes. In the first they appear in the presence of conditions of the nervous system characterized by exaggerated excitability, as for example, chorea, insanity, tetanus, general paralysis, also in transverse myelitis and after operative shock. In the second class of cases they occur in instances in which there is retention of chloral in the system, as for example, in acute and chronic enteritis, eclampsia, hepatic disease, advanced tuberculosis, and abdominal tumors. Then, too, it is well known that the simultaneous administration of alcohol with chloral often causes dermal manifestations, and hot drinks given with chloral, particularly if they are copious, are apt to produce such effects. Of course, in the cases where chloral is applied externally it produces a direct local irritant influence.

THE NEW TREATMENT OF HEMORRHAGE.

There are certain hemorrhages which, even though they are profuse, can be readily controlled because they occur in places where mechanical means can be employed for their arrest; but there are other hemorrhages which spring from vessels so deeply situated that

compression and ligature do not suffice to control them, and in their presence the physician only too frequently finds himself unable to do much for his patient. In this connection the papers which have been recently published in French literature concerning the value of gelatin and calcium chloride or gelatin and sodium chloride for the purpose of causing coagulation of the blood are of interest, and some of them have been accorded space in our Progress columns. One of the most recent of these papers dealing with the indications and contraindications to hemostasis caused by the action of gelatin is that of Paul Carnot in *La Presse Médicale* of November 16, 1898. After calling attention to the fact that he made his first communication concerning this subject in 1896, he goes on to mention the hypodermic injection of sterilized gelatin solutions for the purpose of increasing coagulability of the blood in general. He then points out that the local use of these solutions is exceedingly valuable in controlling capillary or oozing hemorrhage where compresses fail to produce the results desired, and that this substance often suffices when preparations of the iron and the acids fail. It is, of course, absolutely essential that the solution when it is injected shall be absolutely aseptic. Very commonly the gelatin has been dissolved in ordinary sea-water which has been filtered and sterilized. In other instances it is, as we have already indicated, dissolved in ordinary water to which calcium chloride has been added, calcium chloride having great power, as first pointed out by Wright, of Netley, England, in increasing the coagulability of the blood. The solution that Carnot has employed among others is one composed of gelatin 12 drachms, chloride of calcium 2½ drachms, and water 1 quart. Queyat has modified this to the extent of adding a small quantity of glycerin to the solution. Any advantages this glycerin may have as a solvent are, we think, more than counterbalanced by its physiological action, which ought really to contraindicate its introduction into a mixture designed for subcutaneous injection.

As the solubility of the gelatin is a good deal increased by the application of heat, and as heat also aids in making it fluid, it is well to sterilize it immediately before it is to be used, and then to employ it before it becomes thickened by cooling, care being taken of course that it is not used so warm as to cause damage. It is claimed that when one to two ounces of this solution is given under the skin into the loose subcutaneous tissues of the back or thighs it acts very speedily in causing coagulation at the bleeding point. When gelatin solutions are applied to exposed bleeding surfaces, care should be taken to protect these areas lest putrefactive changes take place in the gelatin after it is applied, and if the gelatin solutions are used in the nasal cavities to stop hemorrhage, such precautions must be carried out. Carnot then goes on to point out that there is some danger of producing hypercoagulability of the blood if the gelatin solutions are used too freely, and this possibility is to be considered as an argument against its too free employment. Indeed, Carnot believes that the free injection of both the gelatin and calcium chloride in the presence of pressing hemorrhage may, though it controls the hemorrhage, ultimately exert a deleterious influence upon the blood in general. In his opinion, therefore, the subcutaneous use of this mixture has certain disadvantages and ought not to be commonly resorted to. He thinks that the gelatin solutions are of the greatest benefit when applied locally, and that when it is necessary to give a hemostatic hypodermically calcium chloride itself should be employed, as under these circumstances it is effective in aiding in the coagulation of the blood, but is not capable of causing hypercoagulability since, as is well known, calcium chloride when given beyond a certain point ceases to increase the coagulability of the blood and rather tends to exercise an opposite influence.

In this connection Deguy tells us in the *Journal des Praticiens* of November 12, 1898, that the subcutaneous injection of gelatin solutions is capable of producing the following disagreeable symptoms: A condition of fever may develop, ranging from 2° to 3° above normal, and this may last for a day or two. It is apt to be present in the evening and not in the morning, and sometimes is accompanied by chills and insomnia. The local accidents which follow its injection may be divided into three parts: Pain, due to the injection, of a burning character which is increased by pressure; second, a diffuse redness of the skin or pseudoinflammatory process, violaceous in appearance, which disappears for a moment on pressure and then immediately returns; third, a diffuse induration of the tissues, having very much the same sensation as the induration due to anthrax. Usually this lasts a number of days.

From what has been said for and against this method of using gelatin it is evident that it may prove to be not so valuable a hemostatic as we were led to believe when its usefulness was first suggested; or rather, to express it otherwise, the untoward effects of this treatment may more than counterbalance the good which it is capable of doing.

THE ABUSE OF REMEDIES.

In the recently published edition of a book on Therapeutics by the editor of the GAZETTE the following motto appears on the front page: "When called to guide a patient through an illness the physician should be a watchman all the time and a therapeutist only when necessity arises." That this is a correct interpretation of the duty of the physician is without doubt, and yet there are few physicians who follow its teachings, partly because they overlook it and partly because the patient expects active interference in his behalf and regards a failure to order some medicine as an evidence of lack of interest on the part of his attendant. This desire that a malady should be attacked and vanquished as rapidly as possible is most natural, and no class of patients are as restive under lack of treatment as physicians themselves when they are ill. Probably no class go from one remedy to another without giving the first a fair opportunity to do good more rapidly than physicians, and for this reason, if for no other, they should be patient with those who consult them. Now it is a well recognized fact in the case of the infectious diseases which are self-limited that do what we will we cannot abort them, although we may modify the severity of their effects on certain parts of the body; yet it is the invariable custom with the greater part of the profession to begin active dosing at once, when as a matter of fact this is entirely unnecessary. In addition to the reasons already stated for this act there is the additional reason that they have learned that this or that practice is followed by this or that authority, and they follow blindly in his footsteps, failing to note that the treatment he suggests is only to be employed when needed and not all through the illness.

At the present time there may be said to exist two classes of writers on therapeutic topics, namely, those who believe in giving remedies all the time and claim that they get good results, and those who, having studied with care the whole realm of therapeutics, recognize that there are what may be called limitations to treatment, and that oftentimes it is well to let the *vis medicatrix naturæ* have an opportunity of bringing about recovery, always recalling the fact that all our measures must be aids to this force and that if a drug opposes this force the effects are disastrous.

A good illustration of the administration of a drug for the relief of a condition, and an example of the damage which that drug is capable of producing, is the employment of chlorate of potassium internally in the treatment of diphtheria and membranous croup. This substance has very little germicidal power, practically no influence upon the false membrane, and a comparatively feeble influence upon the mucous membrane itself. On the other hand it is, next to the cyanide of potassium, the most poisonous of the medicinal potash salts. It is irritating to the kidneys, breaks down the blood and interferes with its oxygen carrying power, and yet for a generation this substance in one form or another has been poured into the stomachs of children whose kidneys were already breaking down under the work of excreting the poisons which were accumulating in their blood. Similar remarks hold true, but with somewhat less force, concerning the routine use of coal-tar products in all infectious fevers, in connection with the use of opium in certain forms of Bright's disease, and finally our attention has been called to a case of poisoning by chloroform which has recently been reported in one of the medical journals, in which the author after describing his treatment is frank enough to add these words: "It was nearly two days before the patient recovered from the effects of the drastic measures instituted to save her life." This statement is the more noteworthy since from the description of the case the patient was at no time exceedingly dangerously ill, although sufficient strychnine was given to produce at the end of an hour signs of strychnine poisoning. Notwithstanding this fact more strychnine was given. It is not often that one is conscientious enough to make such a report about a treatment which he has instituted, but it is well for us all from day to day to look back over our cases and to analyze our treatment of them with the object of discovering, first, whether everything that we have prescribed was absolutely needed, and second, and more important, whether anything that we prescribed did more harm than good.

TREATMENT OF WOUNDS OF THE THORAX.

In view of the progress made in abdominal surgery and the very definite rules laid down and generally accepted in regard to non-penetrating and penetrating wounds of the abdomen, it seems singular that the teaching concerning wounds of the chest is, with the exception of the modifications incident to antiseptic surgery, very much the same as that which was accepted twenty or thirty years ago. Nor have there been collections of cases, nor reports of individual experiences, nor collective studies upon this important subject even remotely commensurate with those which have marked the medical literature of abdominal lesions. In this relation a communication of Klett (*Deutsche Zeitschrift für Chirurgie*, October, 1898), based upon Burckhardt's experience with eighty-six stabs and twenty-four gunshot wounds of the chest, is instructive. In our Civil War eighteen bayonet wounds of the chest were reported, with nine deaths. Prahl collected forty-two wounds of a similar nature inflicted during war, twenty-two of which ended fatally. There were seventy-eight spear wounds of the chest reported in the German army between the years 1888 and 1896, only eight of which were penetrating. Two of these died because of wounds of the heart; two were invalided because of subsequent pleurisy. The other four recovered.

The mortality of gunshot wounds of the chest collected from reports of the various wars in recent times is 27.5 per cent, and is about the same for the wounds inflicted in peace either accidentally or intentionally.

The treatment recommended by Burckhardt is one which commends itself as in accordance with the general principles of surgery as practised to-day. All stabs, whether penetrating or not, are enlarged under ether layer by layer until the pleura is reached, thus converting the puncture into an open wound and enabling the surgeon to thoroughly cleanse the tract.

In the majority of instances the wounds inflicted in peace are by means of thoroughly infected instruments, as for instance pocket-knives and ice-picks, and a fairly large proportion may be expected to suppurate. This infection is likely to extend from the parietes to the pleura itself, and to be followed by a secondary empyema. Exploration also enables the surgeon to determine whether parietal vessels, such as the internal mammary or intercostal, have been wounded, and thus to avoid the dangers of fatal primary or consecutive hemorrhage. Unless large blood-vessels have been cut the wound of the lung can usually be left to itself.

In the case of gunshot wounds Burckhardt simply cleanses the orifices of entrance and exit, since he holds that such wounds are less likely to become infected than those by steel. There seems no good reason, however, why the general principle of exploration should not be carried out here, since dangers of hemorrhage are quite as great as in the case of stab wounds, and since thus can be obviated the possibility of a general emphysema.

Of the eighty-six stab wounds treated by Burckhardt, thirty-two were penetrating; twenty-eight of these were converted into incised wounds and were thoroughly disinfected; twenty healed promptly. In one case pericarditis developed, in one case pleuritis, in one hemothorax, and in five empyema, which required a secondary operation for its cure. All patients were finally discharged well.

In four patients the primary disinfection was omitted. One healed promptly, two suffered from empyema, the third died from infection which started along the track of the wound, and the fourth recovered after an attack of pleurisy.

Of the twenty-four gunshot wounds treated, two died as an immediate consequence of extensive injury; a third patient died on the twenty-eighth day after complete healing, of fatty heart. Of the remaining twenty-one cases, fourteen showed absolute signs of wound of the lung. They all got well; six, however, suffered from pleurisy, two even required drainage. One suffered from pericarditis, and was later on treated for empyema.

In sixteen cases the position of the bullet remained unknown.

A further investigation as to the after-history of these cases showed they regained their health completely and were able to perform even arduous work.

This important communication, based as it is upon a very large individual experience, apparently shows that the common practice of at once applying an aseptic or antiseptic occlusion dressing to penetrating or non-penetrating wounds of the chest is a procedure which should be adopted only when the patient is so placed that he cannot be operated upon under circumstances of proper

surgical cleanliness. It would seem that all wounds should be explored down to the pleura and should be thoroughly cleansed and drained, and that an effort should be made to discover whether or not parietal vessels are bleeding.

Reports on Therapeutic Progress

THE TREATMENT OF RHINOPHARYNGITIS IN CHILDREN.

The *Journal de Médecine de Paris* of September 25, 1898, recommends the following treatment: The nasal cavity should be sprayed by the following solution, or solid vaselin may be employed and the ointment introduced into the nasal spaces:

℞ Antipyrin, 7 grains;
Vaselin, 6 drachms;
Boric acid, 1 drachm.

In other instances, where the child objects to this treatment, the following may be used:

℞ Menthol, 1 to 3 grains;
Olive oil, 2½ drachms.

This mixture may be dropped into the nose.

In instances where secretion is chronic and profuse the following powder may be placed in the nasal cavities:

℞ Aristol and lactose, of each 1 drachm;
Aceto-tartrate of aluminum, 1 drachm.

It is well at the same time to wash the nasal mucous membrane once or twice a day with hot water containing boric acid, or salt, or one of the natural saline waters. Where the glands are torpid and the secretion is tough and chronic, the following liquid may be applied to the pharyngeal wall:

℞ Powdered iodine, 3 grains;
Iodide of potassium, 30 grains;
Glycerin, 1 ounce;
Essence of peppermint, 4 drops.

CHLOROFORM ANESTHESIA.

Many years have elapsed since the Hyderabad Commission undertook its well-known inquiry into the action of chloroform vapor, and since then the subject has been widely and incessantly discussed. Notwithstanding the great amount of interest that has been excited by the subject, and the large amount of energy that has been displayed by those who have taken part in the inquiry, it can hardly be said that our knowledge of the action of chloroform has been advanced to any appreciable degree, nor that any of the points at issue have been settled.

Chloroform continues to claim as many victims as of yore, and its use as an anesthetic has, in some quarters at least, been more loudly condemned than ever. Moreover, the diversity of opinion regarding the best method of administering the anesthetic appears as remarkable as ever.

The confusion which surrounds the subject becomes daily more embarrassing to the surgeon who has much operative work to perform. On the one hand he is met with the difficulties and restrictions of ether anesthesia, whilst on the other hand he is confronted with the supposed dangers of chloroform. He is assured by one authority that the use of chloroform as an anesthetic is entirely devoid of danger, whilst others, who claim equal experience, maintain that its use is almost criminal. There is little doubt that one explanation of the meager results which have followed this inquiry is the fact that the discussion has, from its commencement, been carried out in a spirit of such violent controversy that it has tended from time to time to lapse into a mere exchange of personalities.

The unfortunate introduction of the controversial element into the discussion has tended not only to clog the progress of the investigation, but has also served to obscure the issue, and divert the course of inquiry into channels of minor importance.

One of the most remarkable points connected with the subject, and one which has hitherto received but little attention, is the fact that chloroform anesthesia is carried out with such remarkable success in India and with an immunity from fatal results unknown in England or America. Hardly a week passes without the record appearing in one of the English medical journals of one or more deaths from chloroform, yet the pages of the *Indian Medical Gazette* for the past ten years contain reports of only three fatal cases. It is quite possible that other cases may have occurred besides those which have been recorded, but the proportion of such unrecorded cases is probably quite as great in England and America as in India.

The comparative safety of chloroform anesthesia in India is a fact which merits the closest inquiry, and we believe that such an investigation would be likely to produce more fruitful results than some of those others which have been undertaken in the past few years.

The conditions under which chloroform is used as an anesthetic in India differ very widely from those which exist in England.

In the first place, as the operation is conducted with open windows and doors, the air which the patient breathes is much purer, and the percentage of carbonic acid gas is very much less than it is in colder climates. In the second place, the temperature of the air is very much higher as a rule than in England, and evaporation proportionately increased. It is quite conceivable that both these conditions should have the effect of minimizing the danger of chloroform anesthesia.

Another factor which possibly may have a favorable influence is the fearlessness of the natives of India in regard to the effects of chloroform. The ignorant classes in India, who form such a large bulk of those treated in hospitals, seldom exhibit anything like the amount of fear of the anesthetic which is so common amongst English people; a fear which in the latter case is justified by the frequency of fatal results in their country. In England there are probably few persons who have not had personal knowledge of some fatal case, whilst in India the opposite is the case.

We draw attention to these facts as affording indications as to the direction which such an inquiry should take. There are doubtless many other circumstances which share in producing a condition more favorable to chloroform anesthesia as practised in India.

We believe that an inquiry into the matter would prove of great value, and we trust that ere long some one may be induced to undertake an investigation of this nature.—*Indian Medical Gazette*, June, 1898.

THE ACTION OF THYROID AND PARATHYROID EXTRACTS UPON METABOLISM IN THE INSANE.

This very important topic is discussed by EASTERBROOK in the London *Lancet* of August 27, 1898. He first proves that the thyroid is a profound catabolic stimulant. With the patient at rest in bed and on a fixed mixed diet there is a great increase in all the excreta, especially in the water and carbonic acid, and to a less extent in the urea and other products of nitrogenous metabolism. Thyroid thus greatly accelerates the splitting up and oxidation of the tissues. The fats of the tissues suffer most severely, and the reason is probably simply this—that the fats are the most fluctuating of the tissue substances; they are the most readily formed and the most easily lost of the body stuffs, consequently when a powerful catabolic stimulant such as thyroid is introduced into the system the fats are the first to be burned up, and when the thyroid becomes eliminated from the system fat is rapidly laid on. Amongst the fats thus affected are probably the so-called "azotized fats," or phosphorized constituents of the central gray matter, and the early excess of phosphoric acid in the urine is probably derived from this source. The tissue carbohydrates are probably also considerably oxidized, and although the clinical proof of this is not so clear, the great muscular weakness and incapacity for physical exertion during thyroidism may indicate that the glycogen in the muscles, which is the chief immediate source of muscular energy, has been largely burnt up and so is not available. The tissue proteids are also excessively wasted, the "unorganized" proteid being probably affected first, and finally the living proteid or bioplasm itself. After the thyroid is eliminated from the system a gain in weight sets in, and there are other evidences of a powerful anabolic reaction. The rationale of this change seems to be explainable by Hering's theory of the "internal self-adjustment of bioplasm," according to which the bioplasm, when it is being catabolized by some stimulus (*e.g.*, thyroid), tends less and less towards catabolism and more and more towards anabolism, which sets in with a rebound as soon as the catabolic stimulus is removed.

As to the channels by which the thyroid reaches the tissues, the changes in the blood during thyroidism probably indicate that the drug is distributed by the blood to the tissues, but at the same time the early occurrence of the sensory motor and mental phenomena during thyroidism, the evidences of hyperactivity of the central gray matter followed by the signs of its exhaustion, and the early increase of the phosphoric acid in the urine, all seem to the writer to indicate that the thyroid specifically stimulates the central nervous system and through it the metabolism of the tissues. In direct support of this Easterbrook mentions that he fed two rats upon porridge and water, but to one of them was also given daily one thyroid tabloid. The thyroidized rat died with tremors and other nervous symptoms on the fourth day, and while the brain cells of the healthy rat were normal in appearance, those of the thyroidized rat showed distinct chromatolysis, many of the cells being "ghost-like."

Finally, a word in explanation of the conflicting results of the removal of the thyroid

and parathyroids. There seems to be a strong similarity between the "tetanic" symptoms which follow parathyroidectomy, the acute "neurotic" symptoms which follow thyroidectomy, and the toxic phenomena of thyroidism. It would seem that the essential result of thyroidectomy is an artificial myxedema (Horsley's "mucinoid" and "marasmic" stages), and that the acute or "neurotic" effects of thyroidectomy are accidental and, like the symptoms of parathyroidectomy, may be accounted for (1) by the youth of the animal operated upon—the "acute" symptoms are always most common in young animals and are usually absent in old animals; (2) the interference with the rich nervous connections of the thyroid during the operation; and (3) the wounding of the thyroids, in consequence of which colloid is spilt and thyroidism is produced by absorption of the juice. Where surgeons meet with this mishap it is common for them to have a more than usually distinct febrile reaction and tetanic symptoms after the operation. In the removal of the internal parathyroids, which are usually incorporated in the deep surface of the thyroid, the thyroid cannot escape severe manipulation or even actual wounding.

CIMICIFUGA IN TINNITUS AURIUM.

Dr. Albert Robin and Dr. Mendel extol cimicifuga in this complaint, and cite, among other cases, one in which a plug of wax, the obvious cause of the buzzing, was purposely left, while the buzzing disappeared in two days under treatment. Here are their conclusions: (1) Buzzing of the ear may be considered as the reaction of the auditory nerve to direct or reflex irritation; (2) *Cimicifuga racemosa* possesses an action upon the auricular circulation and upon the reflex irritability of the auditory nerve—the average active dose is thirty drops of the extract a day; (3) buzzing which has existed more than two years appears difficult to influence by cimicifuga.—*New York Medical Journal*, July 23, 1898.

THE ACTION OF SUPRARENAL EXTRACT ON THE CIRCULATION.

Velich (*Wien. Med. Woch.*, 1898, No. 26) has confirmed Schäfer and Oliver's discovery that injection of suprarenal extract raises the blood-pressure and stimulates the vagi, and where these have been put out of action or the medulla cut through, causes acceleration of the pulse. The former effect is due to contraction of the small vessels, particularly in the abdominal cavity, the latter to direct stimulation either of the heart muscle or the intracardiac ganglia, together with some influence through the cervical cord. He has also shown that even where the whole cord has been destroyed the injection of large doses of suprarenal extract still causes a noteworthy rise of blood-pressure, which must thus be produced by stimulation either of the vessels themselves or of the peripheral vasomotor mechanism. Continuing his investigations, Velich finds that the medulla is also concerned in the rise of blood-pressure following injection of suprarenal extract, and that intravenous injection still causes this rise in animals which have been deeply poisoned with curare or chloral. These drugs in large quantity practically abolish the functional activity of the spinal cord. In deep curare poisoning the pulse acceleration occurs also when the vagi are intact, showing that their nuclei are poisoned by a large quantity of the drug.

A further series of experiments was performed upon the pulmonary circulation in order to decide whether vasoconstrictor fibers for the pulmonary vessels exist. It was found that the intravenous injection of suprarenal extract leads to a slight rise of pressure in the pulmonary circulation. The principal cause of this rise is that the right heart receives an increased supply of blood from the hyperemic brain through the superior vena cava, while the left heart does not empty itself properly. Hence the existence of a special vasoconstrictor mechanism, central or peripheral, for the pulmonary circulation cannot at present be established. Thus, for example, warm suprarenal extract causes vasoconstriction when applied to most parts of the body in animals or to the human skin, but evokes no pallor when dropped on to the surface of the lungs.—*British Medical Journal*, Aug. 6, 1898.

QUININE HEMOGLOBINURIA.

Murri (*Arch. Ital. de Biologie*, tome xxviii, fasc. iii, 1897) reports a case of this affection. A girl aged seventeen contracted tertian ague in July, 1893. In spite of treatment she was not cured in January, 1894, and was still taking quinine. At that time she had an attack of ictero-hemoglobinuric fever directly after taking quinine, and subsequently whenever quinine was taken such

an attack was observed, consisting in rigors, vomiting, followed by smoky urine, and lastly, jaundice. The spleen became larger and firmer, and sometimes the liver enlarged also, with hypochondriac pain. At the beginning of an attack there was simple polyuria; then from being acid the reaction became alkaline; and lastly, peptone, serum albumen, globulin, hemoglobulin, and urobilin, hyaline casts, epithelial renal cells, and leucocytes, but no red corpuscles or bile pigment, appeared. After an attack the above all disappeared, the serum albumen and peptone last. An examination of the blood showed there was a diminution of the number of red corpuscles, but the malarial parasite could never be found. In spite of this effect of quinine it had its usual influence in prolonging the interval between the attacks of true malaria.

The author gives reasons for believing that quinine hemoglobinuria occurs only in those whose organs have been altered by malaria, quinine alone being insufficient to produce it: (1) For twenty years he has been trying to produce quinine hemoglobinuria in animals without success. (2) In a healthy man 75 or even 300 grains of quinine produces no hemoglobinuria, while in this girl, after malaria, 1.54 grains did with absolute certainty. (3) No case of quinine hemoglobinuria has been reported which was not complicated by malaria. (4) The proof that one has not to do with an idiosyncrasy in a person with whom malaria is a coincidence is furnished by the fact that quinine intoxication appears in most cases, sometimes after a good many doses have had to be taken — that is, after the malarial poison has had time to act on the organism, but not before. (5) It is not produced by an intolerance gradually set up by repeated doses of quinine, for large and repeated doses are often given in non-malarial diseases, and yet not a single case of quinine hemoglobinuria has been reported in these. (6) This hemoglobinuria is almost unknown in Europe, except in Sicily and Greece, and becomes relatively frequent in extra-European countries where malaria is more virulent. (7) The author's patient had three ictero-hemoglobinuric attacks after the malaria was cured, and without any quinine having been given. This shows that the hemoglobinuric mechanism had become so easily set in motion that its usually specific stimulus (quinine) could be replaced by others, though exactly what these were could not be discovered. It seems as though the biographical change left in the patient by malaria would not be permanent, for some months after the patient had been cured of her malaria and had had no quinine attacks a little over 1½ grains of quinine given experimentally had very little effect, and even 7½ grains, though causing intoxication (fever, albuminuria, peptonuria, and urobilinuria), produced no hemoglobinuria.—*British Medical Journal*, Aug. 27, 1898.

HEMORRHOIDS AND THEIR TREATMENT.

The *Medical News* of August 6, 1898, contains an article on this topic of no little interest, by Dr. ERDMANN. From his standpoint, hemorrhoids are distinctly a surgical affection, although the palliative treatment will receive its share of consideration. The close association of hemorrhoids with the genitals makes the discussion doubly interesting to the specialist and the general practitioner. It is not the object of the writer to enter into a prolonged discussion of the causes, nor is the anatomy to be considered in detail, but he trusts that a short description of the pile-bearing area and a few words relative to the causes of hemorrhoids will not be amiss.

The pile-bearing area is but about two and one-half inches in length, beginning at the anal margin, richly supplied with branches from the sacral plexus, and abundantly furnished with arterial and venous channels. It is interesting at this point to note the descriptions given to the end filaments of the veins. They are variously stated as ending in the so-called derivative circulation to that of small sacculations or dilatations, and it is this latter description that is most frequently accepted. To this accepted venous termination the entire hemorrhoidal theory is ascribed. The arteries supplying the pile-bearing area assume a course parallel to the long axis of the bowel instead of transversely, as in the remainder of the intestinal tract. The mucous membrane in this region is peculiarly arranged, particularly so at the lowermost portion of the area. Here the membrane is thrown into folds or columns, forming sinuses known as the columns and sinuses of Morgagni. These folds and columns, with their intervening pouches, frequently, especially so when inflamed or congested, are taken for piles, and it is in this structure that the quack finds his rich reward. These pouches can be everted in all cases, when the bowel is in a normal state, by placing the hands on the buttocks, the patient

then bearing down, and as he does so traction being made on each buttock with the fingers. They will then be seen as folds of mucous membrane, and resemble small semilunar valves with their concavities upward. A probe can be passed downward behind the membranous-like flap for a distance varying from one sixth to one-half an inch, and owing to this peculiarity they are frequently but wrongly called fistulæ.

One who sees many cases of these protrusions is astounded in taking the histories at the percentage of patients who ascribe their disease to attacks of diarrhea, although almost all accepted authors lay great stress on the influence of constipation as the causative factor. It cannot be gainsaid that a relative condition exists between varicose veins and hemorrhoids, as in a great many cases of hemorrhoids other varicosities are found. Naturally, with a predisposition to varicosities in the veins at other parts of the body, a very slight exciting cause is necessary to produce the evil. Some of these causes are obstruction to the venous return, as produced by constipation; intrapelvic tumors; retrodisplacements of the uterus; pelvic exudates; atonic condition of the musculature of the rectum and sigmoid; rigidity or stricture of the anus; expulsive efforts as noted during attacks of diarrhea, and in the expulsive efforts when the outflow from the bladder is for any reason involved, as in cases of stone, stricture of the urethra, enlarged prostate, cystitis, etc. Alcohol, sexual excesses, masturbation, and even unsatisfied sexual desire, are said to be predisposing factors. High living and sedentary habits are also contributing causes. Recently the writer operated in a case which was said to have had its origin in physical exercise. The patient in this case was a prominent amateur athlete, who said that his condition was due to overtraining.

In the general symptomatology the cardinal objective sign is the protrusion of a mass either constant or only seen following the act of defecation. This protrusion varies in size from that of a pea to one that practically surrounds the anal margin, and is from a quarter of an inch to an inch or more in length. Hemorrhage, as a sign, is as likely to accompany irritable ulcers, the so-called fissures, fistulæ, malignant diseases, and polypi, as it is to accompany hemorrhoids of the bleeding or capillary variety. Subjectively, the patient is apt to complain of pain at the time of or immediately after the act of defecation, discomfort, and a sense of an imperfectly emptied bowel, and of tenesmus, which is frequently due to the sphincter grasping the protruding mass. Pain is frequently present in the lumbar region, which may even extend to the thighs and legs. In addition to the symptoms directly referable to the anal region, there is frequently a chain of nervous symptoms of which mental depression, probably due to the fear of the trouble becoming malignant, irritability, fear of some impending disaster, and sexual impairment predominate.

Hemorrhoids, as far as the general practitioner is concerned, may be divided into two great classes, the external and internal. The external ones are those which arise from the tissues outside the external sphincter, while the internal variety consists of those which arise from the lower portion of the rectum, and are seen only when protruded after a movement of the bowels, or protruded as a result of some physical effort, or can be seen upon instrumentation with the speculum or the Kelly proctoscope. The external are subdivided into three varieties—the thrombotic, the cutaneous, and the venous. The latter variety is liable to become edematous, and is then called by some the edematous pile. The thrombotic variety is usually found in the mucocutaneous margin surrounding the anus. They are due, as a rule, to rupture of one of the veins about the anus, occurring as the result of straining during the act of defecation. The pile is hard, very painful, sensitive to the touch, bluish in appearance, and contains clotted blood. The second variety, the cutaneous, is a natural sequence of the thrombotic variety—*i.e.*, the clot is absorbed or organized so that its original site is filled with fibrous tissue. In this type there are, as a rule, no further subjective symptoms than an incessant pruritus, well marked at night and after physical exercise. The third variety of the external—*i.e.*, the venous—borders very closely in its anatomic appearances upon the type of internal hemorrhoids known as the columnar, pedunculated, or venous. In this variety of external piles there is an involvement of the mucous membrane and skin of the anus; the veins are dilated, and the mass may consist of but a single set of vessels or be of such dimensions as to almost completely surround the anus. The symptoms of this variety, barring inflammation and ulceration, are those of a protrusion non- or partially reducible, not painful and not bleeding, except when inflamed

or ulcerated. The internal class may be divided into two varieties—the capillary, or bleeding, and the columnar, venous, or pedunculated. The capillary pile is never seen externally except in cases of relaxation of the sphincter or of dilatation of this muscle. These piles resemble masses of deeply congested mucous membrane, and bleed upon contact of the finger or fecal mass; in fact, they resemble masses of healthy granulation tissue. They are seen upon the use of the speculum and proctoscope, and ordinarily present no evidences to digital examination. Blood is seen after each movement, varying in quantity from a few drops to several drachms. In addition to the local evidences, all of the manifestations of anemia are frequently seen, while the patient presents a subjective chain of symptoms which are entirely of anemic origin. This variety will eventually result in the columnar type. The second, or columnar variety, usually known by the names of venous or pedunculated, are made up of a mass of dilated veins and one or more arterial twigs. They protrude upon straining or defecation, and are readily reducible, except in case of neglect, when they are liable to become strangulated, edematous, or undergo ulceration and slough. Should any of these changes occur, it then assumes all the evidences of an inflamed pile. These pedunculated piles can be felt upon digital examination, and seen readily with the use of the speculum or proctoscope.

In examining the patient externally, the Sims position is the best, provided that the buttocks are well separated and the patient strains as though about to have a movement from the bowel; when this is done almost an inch more of the mucous membrane will be protruded than when in the stooping position. For digital examination, either the lateral or dorsal position of the patient is satisfactory. The finger should be protected with a finger-cot, thoroughly anointed with some bland lubricant. Gentle pressure is then made upon the sphincter until its rigidity is overcome. These finger-cots are so thin that the tactile sensation of the finger is not impaired to any extent, while, in addition, they protect the physician from infection and keep the examining finger clean. For speculum or proctoscopic examination the bowel should be thoroughly clean, and in all sensitive cases anesthesia should be produced. Anesthesia permits of a complete examination being made with a view to locating fistulæ and ulcers, which are frequently present in these cases.

INTESTINAL OBSTRUCTION.

Professor Kocher, of Bern, read a paper on intestinal obstruction. It is still only too common, he remarked, to find cases treated by drugs before the surgeon is consulted. He had had seventy-seven cases of intestinal obstruction (excluding cases of disease of the rectum and external hernia); of these, twenty-six were due to malignant diseases of the bowel, and he resected the intestine in twenty-four of these cases with only four deaths. In nineteen cases tuberculous masses had produced stricture of the bowel; in eighteen of these he operated, and only one patient died. If the moribund cases and those where no operation was done were excluded there remained thirty-eight cases in which an operation was performed, and in these the mortality was only eighteen per cent. It was, however, curious that in the slighter cases, where the ileus might be said to be symptomatic, the mortality was much higher; of seven cases of volvulus there were five deaths. In fact, in the simpler cases the death-rate was fifty-nine per cent. The logical deduction from these statistics is that the great mortality is not due to the operation. The cause of death in most cases was septic absorption from ulcers occurring in the bowel above the obstruction; these ulcers were usually attributed to pressure from feces, but they occurred even when the feces were liquid; they were really due to overdistention, which led to impairment of the epithelium. It was necessary to relieve the distention as soon as possible, and this might be done by a small incision, a radical cure being postponed to a later date. Finally, he urged that surgeons should be called in to see a case of obstruction before any drug is given, and it was very advisable for the surgeon to have the benefit of the physician's opinion when making the diagnosis.— *The Lancet*, July 30, 1898.

COMMON ERRORS OF GENERAL PRACTITIONERS IN DEALING WITH CASES OF PULMONARY TUBERCULOSIS.

F. I. Knight, so well known as an authority on pulmonary disorders, tells us of the errors of physicians concerning pulmonary tuberculosis in the *Boston Medical and Surgical Journal* of November 17, 1898. These errors are well known to the profession and encountered by many of them daily, and he thinks they may be diminished by briefly calling attention to them.

The first error to which the author calls attention is the failure to make an early diagnosis. An early diagnosis is not usually difficult since the discovery of the tubercle bacillus. Failure to make it, however, may be very serious, as it is especially true of this disease that the earlier its presence is discovered the more amenable it is to treatment; whereas, if there is delay till the disease is self-evident and perhaps secondary infections have taken place, there is not much chance of restoring the patient to health. The most striking results of treatment of pulmonary tuberculosis in the great open health resorts and also in sanitaria are in patents who present all the outward aspects of health from the start, who have never appeared as invalids.

Why is it that there is so often a failure to make the diagnosis early in those cases most promising of cure if taken in hand promptly, namely, those with morning cough and expectoration, but no fever or other general symptoms? The reason is that the patient naturally makes light of it, and perhaps contents himself with asking the doctor on the street for a prescription for a little cough, and this may be repeated several times without any suggestion of examination on the part of the physician, or until the patient looks and feels sick.

Another reason is that the physician may be the personal friend as well as medical adviser of the patient and shrinks from a knowledge of the results of a physical examination. This is also sometimes true in cases of a physician and a member of his own family.

The patient naturally considers a slight dry cough as due to some throat irritation, and a little hemoptysis as coming from the same region; but he should not be encouraged in this idea, as is too often the case, by the physician. Any cough should necessitate frequent examination of the chest, until the soundness of the lungs is proven by long acquaintance. Hemoptysis very rarely comes from any lesion of the throat, but usually from the bronchi. Another mistake is neglect to pay proper attention to fever, the physician very likely coinciding again with the patient that he has a "touch of malaria." Time and again has the writer seen patients with a dry cough, chills and fever — not at all of malarial type, however—allowed to go on for weeks and months taking quinine, and no physical examination suggested.

A second error is the failure to admit the gravity of the situation the moment it is discovered, and to put the patient at once in the best possible condition for recovery. Niemeyer used to say that the danger of a consumptive patient was "that he become tuberculous." In the light of modern pathology the writer states that he should say that the danger of a tuberculous patient is "that he become consumptive"—that is, subject to secondary infections.

Unfortunately, too many physicians wait till the patient is consumptive, and then perhaps recommend expensive treatment, which is almost surely useless.

It is better, as a rule, that the patient also should be fully informed of the gravity of the situation, as in this way only will he give thorough cooperation in the effort for his recovery. Of course, he should be fully impressed with the hope of recovery if the proper course is pursued.

A third error is, while temporizing, recommending treatment not only useless, but positively injurious. Giving medicines which take away the appetite and interfere otherwise with digestion does a great deal of mischief. Cough syrups, cod-liver oil, and creosote do a large share in hastening the decline of patients. If any sedative is required it should be given in as simple a form as possible, and without syrup. The author does not mean to say that cod-liver oil never does good, for there are patients who can take and assimilate it with ease, and greatly to their benefit, but it is cruel to prescribe it in a routine way without selecting cases and watching effects. Who has not many times seen patients with thickly coated tongues swallowing large doses of oil faithfully three times a day, eructating it all the time, and capable of assimilating neither that nor any other food? Neither will he deny that creosote does good in some cases in modifying the bronchial secretion and improving digestion, but he believes that large doses as a rule take away the appetite and do more harm than good. It, like cod-liver oil, should be administered tentatively.

Another unfortunate mistake is often made in giving a general unrestricted order to "drink whiskey" as a preventive of consumption. The injudicious use of alcoholic stimulants, by depressing the vital forces, not only makes the patient irritable and dissatisfied with himself and everybody else, but very seriously interferes with his recovery.

Many patients also are seriously injured by being told to exercise when they should

be kept quiet. This pertains especially to patients in a febrile condition.

A grievous error is often committed in the matter of sending patients away from home. Sometimes those are sent away who have only a few weeks or months to live. Such patients in almost every case would naturally be better off at home. Others are advised to change climate who cannot possibly afford to remain away from home long enough to do any good. They go away, live in miserable quarters, on poor food, and having spent all their money, in a short time are obliged to return. They naturally would have spent their little money to much better advantage at home.

Insufficient care is exercised in advising patients who are able and fit to make a change as to the selection of a climate. Too often the advice is simply to "go south" or "go west." In such cases the patient often flits about from one climatic condition to another, without staying long enough to fully experience the modifying effect of any one, perhaps till the chance for beneficial action is past.

The last error, a very grave one also, to which the author calls attention is allowing the patient to go without sufficient medical supervision. This disease, like any formidable enemy, requires constant watchfulness—to help gains promptly, and as promptly to stay relapses. The general practitioner himself is apt to fail in this because his attention is absorbed in critical acute cases; but he also fails to place his patients in proper medical care when he sends them away, whereas the presence of a physician skilled in treating such cases should often determine the selection of a residence for the patient.

These are a few of the more serious of the errors in dealing with cases of pulmonary tuberculosis, by means of which hundreds of lives are sacrificed which might have been saved. Therefore it becomes us to reiterate and reiterate our warnings as long as the dangers continue to exist.

THE TREATMENT OF CHOREA.

An article with this title is contributed to *Treatment* of November 10, 1898, by WYNTER. He thinks that the first matter of importance in the cure of chorea consists in keeping the child in bed, necessitated by the tendency to endocarditis, and emphasized by its beneficial effect in shortening the disease or bringing about a speedy cure in cases where it has existed without material benefit from drugs for weeks and months while the child remained up and about.

The efficiency of treatment by arsenic is often marred by insufficiency of dose. It is common practice in the case of children, who make the bulk of the patients with chorea, to prescribe two or three drops of Fowler's solution. This may answer in a few mild cases, but in the majority it is insufficient, and the dose must be increased to ten or even fifteen drops in the course of ten days or a fortnight if the symptoms do not decline. A good example of this was afforded by a child of five, who was admitted to the Middlesex Hospital with extensive movements, and in whom a dose of three minims given for some weeks produced little or no effect; but on doubling the dose for three days, and then quadrupling it, the movements rapidly subsided. Toleration is readily secured provided the drug is not given in too large a dose at first or the dose increased too rapidly, the medicine always being given, with sufficient dilution, immediately after food.

That the exhibition of arsenic may in some cases be carried too far and produce serious neuritis is exemplified in cases exhibited at the Clinical Society during 1898 by Dr. Batten, in which fifteen minims of Fowler's solution had been given three times a day. As in the case of antipyrin rash, this accident is more likely to occur when the patient is not kept in bed, so that the intensity and duration of medication are increased to combat the unfavorable influence of activity and excitement. This furnishes an additional reason for keeping the patients in bed under close observation during treatment by powerful drugs.

In all the cases a liberal diet is required without stimulants, the subjects of chorea being usually of a thin and nervous type, and the disease is itself exhausting and commonly associated with anemia and debility.

The principal complications are endocarditis or pericarditis, which in the acute stage are best treated with salicylates, as in rheumatism. The indications are chiefly a hurried, weak pulse, with palpitation, some precordial discomfort, and perhaps a soft blowing murmur or friction sound. They are so slight, and may be so ill-developed, that in a restless child it is easy to overlook them. Only in the latter stage, of contraction deformity of the valves, do the rough murmurs with evidence of cardiac enlargement and backworking show themselves.

In a few cases in which the actual movements are so violent and continuous as to bring about contusion and abrasion of skin, with exhaustion, wasting, and loss of sleep, direct sedatives are required. Chloral and the bromides are then generally serviceable, the dose being daily increased from ten or twenty grains until either the symptom is subdued or physiological effects of the drugs produced. If this treatment fails, recourse must be had to subcutaneous injections of morphine or even the inhalation of chloroform.

When the active phase of the disease declines the patient still needs care and treatment on account of the remaining anemia and debility, the mental condition of hebetude and intractability, and the tendency to recurrence of the malady, apart from the more serious heart complications which may have resulted.

The best tonics are the milder preparations of iron, either the wine or citrate, with liquor arsenicalis in comparatively small doses (three to five minims), or cod-liver oil; absence from competition with others, either in school or on the playground, for some months, which are best spent at the seaside or in the country, where quiet amusement can be obtained without books or boisterous companions. In protracted cases and during convalescence great benefit may be derived from massage, passive exercises, or such diversion as may be obtained in the use of a skipping-rope or hoop. For the most part it is best to avoid books and such toys as appeal to the imagination and provoke spontaneous activity of the brain.

ANTIDIPHTHERITIC SERUM IN OZENA.

HOLGER MYGIND, of Copenhagen (*Journal of Laryngology, Rhinology, and Otology*, August, 1898), has treated ten cases of ozena with subcutaneous injections of antidiphtheritic serum. Of these, seven were young soldiers, aged nineteen to twenty-two; while three were girls, aged respectively ten, twelve, and fourteen, all three being sisters, and daughters of a non-commissioned officer. He took great care to select only such cases for treatment as were pronounced and true cases of genuine ozena, and in all there were present typical fetor, discharge of crusts, and atrophy of some part of the osseous walls of the nasal cavity; besides, in all cases the mucous membrane of the nose was of the character generally described as atrophic—that is, it was pale, shrunk, and dry. He first commenced injecting subcutaneously twenty cubic centimeters of the antidiphtheritic serum prepared in the bacteriological laboratory of the Copenhagen University gratuitously for the Danish medical profession. This serum has a strength of about one hundred antitoxin units in each cubic centimeter. The dose was repeated—as is done in cases of diphtheria—a few days later. This dose was soon found to be too strong, or could not at least be repeated so soon, the patients getting severe symptoms of serum infection. By degrees he found ten cubic centimeters to be a proper dose for adults and five cubic centimeters for small children, increasing the dose now and then to fifteen cubic centimeters in adults. He also found it best to wait to repeat the dose until eight to twelve days had elapsed after the previous injection, to prevent accumulative effect.

According to the numerous experiments the author has made there can be no doubt that it is a fact that subcutaneous injection of antidiphtheritic serum in cases of genuine ozena has an immediate and very marked effect upon the mucous membrane of the nose. This action generally appears toward the end of the first twenty-four hours after the injection, the patient discharging the crusts with more ease; besides, the crusts are mixed with mucous or mucopurulent secretion. During the following days the mucous membrane of the nose loses its dry and pale appearance, becoming moist and assuming a natural vivid-red color, and also swelling considerably. The color and the swelling are very different from the color and swelling of the mucous membrane as seen, for instance, in cases of using Gottstein's tampons or copious syringing, having as a rule not the slightest appearance of irritation. Besides, the crusts are seen to be surrounded with mucous secretion, which also appears on the surface of the mucous membrane where there are no crusts. After this period of reaction a period of counter-reaction generally is seen, the pituitary membrane beginning to assume its red character; but after a second or third injection—a greater number of injections might perhaps be necessary now and then—Mygind has, in all cases observed by him, seen a lasting improvement. This improvement has in a few of his cases been only small, though distinct; in most cases it has been very considerable, the patients having lost the fetor, and either never discharging any crusts or only discharging small ones

now and then. In one case the result approached very near to recovery.

Mygind concludes by expressing the opinion that the injection of antidiphtheritic serum is the most effective remedy for ozena yet known. He has made experiments to determine what it is in the serum that produces the effect. They are not yet complete, but he has satisfied himself that the presence of the toxins is of no importance, but that it is the serum alone which acts. He adds that he has obtained results apparently as good as those here reported by injections of normal horse serum in ozena.—*British Medical Journal*, Oct. 22, 1898.

CARBOLIC ACID POISONING.

LEWIN (*Deutsche Medicinische Wochenschrift*, April 21, 1898) appends some remarks upon a suspected case. The severity of the poisoning may be due: (1) to the place from which the poison gains access into the blood; (2) to the quantity taken; and (3) to the concentration. Many cases of fatal poisoning have been recorded where a non lethal dose has been injected into the rectum for the purposes of treatment. Death has been known to occur after a dose of six grains taken by the mouth, and recovery has ensued after doses of thirty or thirty-five grains; in the latter case the carbolic acid was dissolved in alcohol, which would favor its absorption into the blood. Even 120 grains of raw carbolic acid has been taken, and recovery ensued. One grain of carbolic acid, the amount found in the suspected case, could not produce death. The author found that when animals were poisoned with concentrated or weak solutions of carbolic acid, and this was allowed to remain in the stomach after death, appreciable quantities could pass out through the stomach walls into the abdominal cavity. Death may sometimes be produced without the poison entering the blood in a so-called reflex fashion. As regards the action of carbolic acid on the mucous membranes, a one-per-cent solution produces no change, and a two-per-cent a slight color change, to be seen only on careful examination. A four- or five-per-cent solution produces a white discoloration, which disappears in the living subject in three to four hours. Fluid ninety per cent, or the crystalline substance, calls forth a white slough upon every tissue of the body, whether applied pure or in water. The symptoms produced by carbolic acid vary: (1) If a concentrated solution (sixty to ninety per cent) is drunk, the patient may die rapidly with or without previous vomiting, or he may become comatose, with stertorous breathing, slow pulse, vomiting, etc., from which he may die or recover; (2) if weak solutions (one to three per cent) are taken, there may be prostration, unconsciousness, spasm, vomiting, etc. When weak solutions are taken into the stomach the symptoms develop slowly, giving time for treatment.—*British Medical Journal*, Oct. 22, 1898.

EXERCISE AND OVEREXERCISE.

Dr. LAUDER BRUNTON opened the session of the York Medical Society recently by an address on exercise and overexercise, in which he said, as was to be expected, a great many wise things with which every physician will agree. He said, for instance, that exercise which put into action every muscle of the body, but did not put any one into action for too great a length of time at once, or in too violent a manner, was exceedingly beneficial, but in applying this excellent principle he had the temerity to compare unfavorably with lawn tennis the three most popular physical recreations of the day—cricket, golf, and cycling. Moreover, he classed together croquet, cricket, and golf—rather a curious collection—on the ground that in playing them there was not the same general movement of the whole body that was necessary in lawn tennis or polo.

As to croquet all will probably be ready to agree, but as to cricket and golf it is not likely that their devotees will be disposed to accept Dr. Brunton's rather sweeping assertion. What muscles of the body are brought into play in lawn tennis which are not brought into play by, say, a fast bowler, we should be rather curious to know; and as to golf, the distribution of the stiffness after a day's play in a man out of condition and practice leads at least to the suspicion that very few muscles in the body have not been called into action. As to cycling, Dr. Lauder Brunton said that it tended to narrow the chest and to cause more or less a permanent stoop. He added that, as it had become so very general an amusement, its physical exercises must be very carefully watched. Like most of us, Dr. Brunton has been struck by the fact that the girl of the period tends to be divinely tall, and he seems disposed to put this down to the great popularity of lawn

tennis a few years ago. It is certainly a pity that this very excellent game appears to be going out of fashion owing to the great popularity of cycling, which we should be disposed to agree with Dr. Brunton is not an exercise so well calculated to produce an all-round development of the muscular system.

Although Dr. Brunton spoke in faint praise of cricket and golf, he admitted that they shared with tennis one essential feature of a good game—intermittent action of so many groups of muscles. Passing on to speak of overexercise, he observed that what was sufficient exercise for the muscles might be overexercise for the heart, so that schoolboys ran a risk of injury if their athletic power were judged from their apparent size and strength and not according to the strength of the heart.

Dr. Brunton then pointed out that a continuous strain upon one set of muscles was not only painful and exhausting but injurious, and illustrated this point very happily by referring to the fatigue experienced by men and women employed in shops who were compelled by custom to stand for many hours a day. He showed a rest by means of which a shopwoman could sit down and take the weight of the body off the legs, whilst movements behind the counter were hardly interfered with. The cause of the quickened breathing associated with muscular exertion was really the poisonous products formed by muscular action, and the shortness of breath was due to heart disturbance. Thus, in the case of growing boys, football or paper-chases might lead to distinct heart strain.

Another factor which Dr. Brunton said must be regarded in exercises for boys and young men was that mental fatigue caused bodily exhaustion. If boys were pushed both at lessons and at exercises they were much more likely to break down than if they were pushed at one or the other alone. In adolescence the heart, like other muscles, though it was more easily strained, recovered more readily, and with moderate care would recover completely.

In conclusion, Dr. Brunton dwelt on the important point that, while in middle life the heart was less liable to strain, yet as age advanced, and especially if the arteries became atheromatous, the heart was not only more easily affected by strain, but had less power of recovery—a fact which has its obvious bearing on the kind and amount of exercise which should be taken as age advances.—*British Medical Journal*, Oct. 22, 1898.

ORGANOTHERAPY IN DIABETES.

With the discovery of the value of the thyroid treatment in cases of suppression of the functional activity of the thyroid gland, a new hope arose that some other grave and hitherto intractable diseases might be favorably influenced by treatment based on similar lines. Diabetes was one of the diseases to which early attention was given in this regard. Experiment has distinctly proved that extirpation of the pancreas in certain animals will surely produce diabetes, and morbid anatomy has equally demonstrated that in at least one class of cases of human diabetes a total disorganization of the pancreas has sometimes been found; thus it appears that diabetes might be due to the suppression of some function of this organ, and this apart from the mere secretion of pancreatic juice. It was therefore hoped that pancreatic feeding might supply the deficiency in the same way as thyroid feeding had so distinctly supplemented the functions of the thyroid body. These expectations have not, however, been realized, and with few exceptions the treatment of diabetes proved to be of the pancreatic variety; but feeding with pancreas has ended in disappointment.

Dr. Ferdinand Blumenthal has recently endeavored to throw light on the causes of the failure of this treatment of diabetes, and to indicate the lines of investigation to be pursued in the future. The gist of the whole question obviously lies in the discovery of the active principle of the pancreas, the absence of which is believed to lead to the development of the pancreatic form of diabetes. Experiment renders it probable that this active principle is a glycolytic ferment, distinct, as the researches of Blumenthal himself as well as others show, from the oxidative ferment. On this supposition a rational treatment of diabetes would consist in supplying this ferment in cases in which it was absent through disease of the pancreas. This ferment may be destroyed by various secretions, such as those of the stomach, or it may be insufficiently absorbed from the bowel. In such cases the use of pancreatic gland tissue containing active glycolytic ferment would be rendered nugatory. Or, again, glycerin or saline solution may fail to extract the glycolytic ferment from the pancreas, with the consequence that sometimes an inefficient preparation may have been used in treating diabetes by the subcutaneous method.

It is not assumed that this glycolytic ferment is exclusively manufactured in the pan-

creas, and hence the treatment would apply to cases of diabetes not necessarily of pancreatic origin. Professor v. Leyden saw a case of diabetes markedly improved by the use of the juice expressed out of the pancreas, and Blumenthal, availing himself of Leyden's suggestion, has been able to prepare the glycolytic ferment in considerable quantities. Thus under a pressure of 70 to 100 atmospheres he was able to obtain from 500 grammes of pancreas 100 to 250 cubic centimeters of fluid rich in ferment. This fluid can be kept under ice for more than ten weeks without the addition of any antiseptic. The sugar solutions used for testing this ferment must, of course, be sterile. Blumenthal mentions that alcohol does not destroy the ferment if left in contact with it for only a few hours, and that hence the ferment may be obtained in a dry form. A difficulty, however, lies in the administration of the glycolytic ferment, since it is extremely poisonous when given subcutaneously to rabbits, and dilution does not overcome these deleterious properties. The author says that the task of finding an efficient and harmless glycolytic ferment prepared either from the substance of organs or from plants must remain a problem of the future.

These researches will be watched with interest, but it must not be forgotten that Minkowski failed to benefit depancreatized dogs by the hypodermic injection of pancreatic emulsion, and it has yet to be shown that Blumenthal's juice, although active in vitro, possesses therapeutic properties even in animals. — *British Medical Journal*, Oct. 22, 1898.

CORNEAL ULCERS AND THEIR TREATMENT.

The London *Lancet* of October 22, 1898, has an article by PERCY DUNN in which he refers when speaking of this condition to two drugs — namely, chinosol and eserine — and about each of these he adds some details. With regard to chinosol, concerning the advantages of which the writer has been repeatedly asked, he believes it to be the best antiseptic agent which is now in the market, and the longer he uses it the more he prefers it and the closer does it seem to him to fulfil the requirements of an ideal preparation of the kind. There are certain reasons for doubting whether in ophthalmic surgery the principles of antisepticism are followed in the present day to the extent which their importance demands, and it is probable that the want of precision in this regard is partly due to the fact that among the multiplicity of antiseptic agents there is none which has actually found general favor with ophthalmic surgeons. The perchloride of mercury, carbolic acid, boric acid, each has its drawbacks. Each is undoubtedly useful in its way, but neither the one nor the other has ever excited sufficient enthusiasm to cause thorough antiseptic principles to prevail in the domain of ophthalmology. The importance of this matter he believes to be such that he holds sympathetic ophthalmia would be an impossible complication in eye surgery were a wound of the ciliary region to be treated from the first with every antiseptic precaution. In fulfilment of this belief he has treated within the past year several severe wounds in the dangerous zone, and in each case the eye made an excellent recovery.

The results the author has attributed to the systematic antisepticism practised by means of chinosol. The chemical name of this drug is potassium oxyquinoline sulphonate, and one of its chief advantages is the potency of its germicidal action — a fact which has been incontestably proved by bacteriological investigation. In addition, it is freely soluble in water, and thus is handy for use. Moreover, it is non-caustic, does not injure the skin of the hands, does not coagulate albumen, and is non-hygroscopic. Again, it is one of the most economical preparations in the market, for owing to its potency only weak solutions of the drug are necessary. Mixed with 1 in 20 of boric acid it forms an admirable antiseptic ointment. It might, perhaps, seem that in saying all this the writer is praising chinosol inordinately. The fact, however, is that a lengthened experience has taught him that it is an excellent preparation, possessing advantages which in time must commend it to every operating surgeon.

With respect to eserine, there is some unanimity of opinion among the authors of modern text-books on ophthalmic surgery that the drug should be avoided in the treatment of corneal ulcers. The author's experience, as will have been gathered, does not accord with that view. On the other hand, he believes that the feeling which prevails against eserine in this connection has arisen in consequence of misconception regarding its use. The great point to remember is to use it in a weak solution. The evil repute of the drug has been mainly gained by employing solutions of greater strength than

were necessary. Formerly eserine drops of the strength of four grains to an ounce of water used frequently to be prescribed, and then troublesome symptoms were nearly always induced. But it is seldom, if ever, necessary to resort to a higher strength than half a grain to an ounce solution, and for continuous instillation in cases of chronic glaucoma even a less strength than this may be satisfactorily employed.

Experience has fully demonstrated that there are certain forms of ulceration of the cornea which atropine fails to benefit, but which, on the other hand, readily yield to eserine. To define what these particular forms are is a question which has been repeatedly asked in the writer's out-patient room, and the answer may here be given as follows: All sloughing, infective, and vascular ulcers are best treated with eserine, as well as, of course, those situated at the corneal margin at which perforation is threatening. This may be regarded as a broad rule for guidance, but there remain other cases concerning which no rule can be expressed in words. The writer has in mind those cases of simple ulcer in which atropine has been used and apparently failed. In many such he has found eserine to act like a charm, the injection of the globe quickly clearing up in consequence and the ulcer rapidly beginning to show improvement. A typical case may here be mentioned. A short time ago a man wearing a shade was led into his out-patient room by his wife. The history was that he had been under treatment at an ophthalmic hospital for five weeks. There was a superficial central ulcer of each cornea with photophobia and some injection of the globes. The pupils were widely dilated from atropine. This seemed to be a case in which eserine was clearly indicated. Accordingly eserine drops (one-half grain to an ounce of water) were ordered to be instilled twice a day. At the end of the week, when the patient again presented himself, the improvement was very manifest. Two days after using the drops the patient discarded the shade and the photophobia had gone as well as the injection of the globes. Before the end of another week he had returned to his work.

Undoubtedly in cases where photophobia is troublesome eserine is of service by contracting the pupil and cutting off light to the eye, while atropine increases the trouble by dilating the pupil, thus placing the patient with his damaged cornea in a helpless condition in the presence of light beyond a low degree. It is quite possible that the utility of eserine in the treatment of corneal ulcers is partly due to the fact that the drug reduces the tension of the globe. This is only a reasonable assumption when we recollect that atropine tends to raise the tension and that an eye in which increased tension has occurred is not one in which healthy nutrition is likely to be present. By lowering the tension, then, in these cases just the difference may be made in securing the establishment of those nutritional changes necessary for the complete repair of the ulcer.

RESTORATION OF SEVERED PARTS.

The possibility of restoring severed parts, even under unfavorable circumstances, is not so generally appreciated as it should be, and attempts which might be successful are not made. Lately we published three cases in which the severed external ear was successfully replaced. In one (Dr. Brown's) the circumstances were anything but encouraging. The ear had been bitten off by a horse and was found lying in a stable yard. Neither surgical instruments nor antiseptics were available; a common needle and thread had to be used. In the other two cases (Dr. Purcell's) the surgeon adopted the ingenious plan of keeping the ear warm and endeavoring to restore the circulation by hot salt bags. We do not know of any other instances in which this has been done in the attempt to restore severed parts. To what extent it is useful it is difficult to say; at any rate, it is rational.

Several cases of union of severed finger-tips are recorded. In the *Johns Hopkins Hospital Bulletin*, October–November, 1892, Dr. Finney has published a case of successful suture of severed finger-tips after seven hours. The middle finger was cut off just below the last joint through the phalanx, the ring finger at the root of the nail. The raw surfaces were freshened and the tips were attached each by four sutures. Dr. Finney used antiseptic dressings, but not solutions, because bichloride of mercury and carbolic acid produce a thin layer of coagulation necrosis. The wounds united by first intention.

In a recent number of the *New York Medical Journal* appears an account of the following case, published in the *Louisville Medical Monthly* by Dr. John Cook Laurens: A colored man in using a heavy axe cut through his shoe and severed the metatarsal bone of the first toe through the head, completely disar-

ticulating the toe, and also cut off the second toe in front of the metatarsal joint. He was seen four hours afterwards. The shoe and sock were cut away and the second toe was found separated, whilst the first was hanging by a mere string of skin, every muscle and vessel being cut. They were united by interrupted sutures which included the tendons. A dressing of iodoform and boric acid, equal parts, was used and a splint was applied. The iodoform had to be discontinued because it proved irritating. Union by first intention occurred over more than half the wound, and there was but little pus where granulation took place. On the third day sensibility was present in both toes, and in a week the patient could move them a little. Finally they were strong, movable, and sensible, and except for a little tenderness the foot was as good as ever.—*The Lancet*, Oct. 22, 1898.

THE STERILIZATION OF CATGUT BY DRY HEAT.

In the London *Lancet* of October 22, 1898, DAUBER tells us that the following is the method of sterilizing catgut adopted by Professor Tscherning, of Copenhagen, who recently very kindly showed the writer the details observed by himself in its preparation at the Kommune Hospital in that city. The ordinary commercial catgut as it comes from the manufacturer is placed on trays in the sterilizer between sheets of cellulose paper. It is then heated for six hours consecutively, for the first hour at a temperature of 60° C., for the second and third hours at 100° C., and for the fourth, fifth, and sixth at 140° C. It is then removed, wrapped up, and closely sealed in an envelope of cellulose paper, which is again placed in another envelope of slightly larger size and similarly closed. The catgut now encased within two firmly sealed envelopes is a second time placed in the sterilizer and subjected for another two hours to a temperature of 140° C. The envelopes are placed in racks in the sterilizer, and contain various sizes of catgut labeled on the outside, some of a size for ligaturing the pedicle in ovariotomy, others for fine buried sutures or other purposes where absorption is desired within a short period. These envelopes can be taken from the sterilizer and placed in the pocket or bag of the operator, and need not be opened until the time of operation. Thus they are very handy and portable.

It is to be remembered that catgut ligatures prepared by any of the wet methods, if kept in spirit for any length of time, become hard and need more time for absorption. If, on the other hand, they are kept in an antiseptic aqueous solution they tend to become soft and lax, whereas if kept in any preparation of glycerin they are somewhat difficult to manipulate owing to their extreme slipperiness. The dry catgut is without these disadvantages. The method of raising the temperature by slow degrees prevents the catgut becoming brittle—the grease and oil in the gut being driven off gradually at the lower temperatures.

FLUORIDE OF AMMONIUM.

M. BAUDOIN (*Gazette Hebdomadaire de Médecine et de Chirurgie*, Oct. 2, 1898), in his thesis to the Faculty of Paris, relates the results obtained at the Pitie by Dr. Robin with fluoride of ammonium in the treatment of abnormal fermentations of the stomach. Fluoride of ammonium, he says, acts upon lactic, butyric, and acetic fermentations, not only by destroying the ferments, but by modifying favorably the influence of the gastric juice on the digestion of albuminoids and the refuse. Its bactericidal action is not simply transient, but appears definite, as his observations show. Fluoride of ammonium has no noxious action on the chemical ferments of the stomach. It is perfectly tolerated and has no toxic action on the organism.—*New York Medical Journal*, Nov. 12, 1898.

THE INTRACEREBRAL INJECTION OF TETANUS ANTITOXIN.

The daring procedure first successfully practiced by Quenu and Chauffard, as noted in the *Journal* of July 14, has been performed for the first time in this country, and the eighth on record, by Dr. Rambaud, of the New York Pasteur Institute, in the case of a patient in Passaic, N. J., who developed tetanus after a lacerated wound of the calf of the leg due to falling through a skylight. A large portion of the calf of one leg was torn completely away. "Antitoxic serum was injected hypodermically but without effect. As a final effort it was decided to resort to the heroic measure of trephining the skull on both sides and injecting the antitoxin directly into the anterior lobes of the brain tissue. This was accordingly done, with the result that almost immediately there was a relaxation of the muscles of the jaw.

Since then improvement has been steady and constant." Dr. Rambaud was present at the first successful operation performed by Quenu and Chauffard, in which Roux injected the antitoxin. The period of incubation of the disease is not stated. It is to be hoped that a fuller report of the case, which is one of great interest and importance, will be forthcoming.

Du Hamel (*La Médecine Moderne*, Aug. 10, 1898) also reports a case of tetanus occurring in a boy aged fifteen, produced by a pistol-shot wound between the thumb and index-finger. Later symptoms of tetanus developed and he was taken to the Pasteur Institute, where, in addition to hypodermic injections of antitetanic serum, three cubic centimeters of a similar fluid was injected in each side of the brain near the fissure of Rolando. At the time the injections were made the patient was in a condition of strong opisthotonos. The contractions gradually diminished, though they did not entirely disappear for some days. In three weeks he was out of the house.—*Boston Medical and Surgical Journal*, Oct. 27, 1898.

THE TREATMENT OF ANEURISM BY SUBCUTANEOUS INJECTIONS OF GELATIN.

At the meeting of the Paris Academy of Medicine held on November 8, 1898, M. Lancereaux referred to some experiments which he had made upon animals, which showed that in a very short space of time after the injection of gelatin blood drawn from the general circulation would coagulate in a few minutes. In man after an injection he had seen coagulation occur only in the aneurismal sac. The operative technique of the injection is as follows:

White gelatin in a quantity of from four to five grammes is dissolved in a seven-per-cent solution of sodium chloride in measure 1000 to 2000 cubic centimeters. The solution is placed in a flask, which is sealed and then sterilized with its contents at a temperature of 120° C. For the injection a flask of the capacity of 500 cubic centimeters is got ready, fitted with a cork and two tubes like a wash-bottle. The long tube is connected with a sterilized needle and the short tube with an india-rubber air-ball. The gelatin is liquefied in a water-bath at a temperature of 35°C. and poured into the flask, which is also kept in a water-bath. The injection is made slowly into the subcutaneous tissues and should take fifteen minutes. Thus performed it is not painful and no reaction follows. It should be repeated every six or eight days until the sac is obliterated.

M. Lancereaux said this method, if carried out with care, gave excellent results in the most desperate cases.—*Lancet*, Nov. 19, 1898.

CLINICAL OBSERVATIONS IN REGARD TO GENERAL ANESTHESIA BY THE SCHLEICH MIXTURES.

The *Medical News* of November 12, 1898, contains an article by GARRIGUES on this subject. The outcome of the author's investigation is that the Schleich mixtures are easily taken; that they may be used in all cases in which general anesthesia is not contraindicated; that anesthesia can be induced in a short time and kept up with small amounts of the fluid; that there is little accumulation of mucus, little vomiting, hardly any cyanosis; that there is no bad effect on the kidneys; that the heart is not much influenced by it, although somewhat weakened; but that there is some danger in regard to respiration, although apparently not more so than with other anesthetics; and finally, that it affects the patient much less than ether or chloroform. The writer can, therefore, recommend it for general use. Its advantages are so great that it ought at least to have a fair trial and only be condemned for cause.

ATROPINE IN DELIRIUM TREMENS.

TOUVIME (*Vratch; Archives Médicales Belgiques; Gazetta Medica Lombarda*, Sept 12), starting from the standpoint, based upon the researches of Mendel and Krukemberg, that in delirium tremens certain regions of the brain are in a state of depression, has tried various medicaments with a view to counterbalancing and dispelling the cerebral depression. He administered atropine to eleven alcoholics affected with delirium tremens, of whom five had the furious and six the calm type. In ten cases the patients became quiet shortly after a single injection and fifteen minutes later were asleep. The dose employed was one milligramme (about one-sixtieth of a grain) of sulphate of atropine subcutaneously. In one case alone, notwithstanding the administration of a larger dose of one milligramme and a half, the patient continued very restless. The injection was made in this case in the evening; in the

morning, after a cold affusion, the patient became calm. The following night he slept well.

Further, Touvime resorted to injections of atropine in a case of post-typhoid psychosis in a non-alcoholic. Two injections daily were given—namely, morning and evening—the dose being again one milligramme. The patient was completely cured in five days.

DIPHTHERIA IN LONDON.

In the *Medical Press and Circular* of October 12, 1898, DIXEY tells us it is a fact admitting of no dispute, that whatever the cause, the case mortality of diphtheria in the metropolis has undergone a steady diminution since 1894, the year of the introduction of the serum treatment. In a paper to which he has already referred, read at the Carlisle meeting of the British Medical Association in 1896, he anticipated that by the end of that year the case mortality for the twelve months would, for the first time on record, have sunk below twenty per cent. This expectation, based on the course events were then taking, was quite borne out by the result, the proportion of deaths to notification for 1896 being, as will be seen on reference to Mr. Shirley Murphy's report lately published, only 19.3 per cent in 1896, as against 20.4 per cent in 1895, and 23.6 per cent in 1894. Since the date of the materials dealt with in that report, the figures for 1897 have become available, and it is satisfactory to find that the diminution in case mortality still continues, the percentage of cases to notification for last year having sunk to the comparatively low figure of 17.7. From a table, the data for which are derived from Mr. Shirley Murphy's report, partly from the Registrar-General's weekly returns, and partly from the monthly list of notifications published in the columns of *The Lancet*, the writer has found that this diminution in case mortality has progressed in spite of fluctuations in the number of both cases and deaths. It may be added that the experience of 1898, so far as it has gone, makes it probable that a still further reduction in relative fatality may be looked for. If any one doubts that this improvement in the case mortality of diphtheria is due to the introduction of the serum treatment, the writer thinks he may fairly be called upon to say what other factor can have been at work since 1894 capable of producing the present result. The fact of the diminution in case mortality cannot be disputed, and of this the more or less general adoption of the antitoxin treatment would seem to supply the most feasible interpretation.

THE USE OF MORPHINE IN BRIGHT'S DISEASE.

SYDNEY RINGER, of London, thus concludes a paper on this topic in the *Journal of the American Medical Association* of October 8, 1898. He says that Osler writes concerning uremia, "for the restlessness and delirium morphine is indispensable. Since its recommendation by Stephen Mackenzie in uremic states some years ago, the author has used this remedy extensively and can speak of its great value in these cases. He has never seen ill effects or any tendency to coma follow." Ringer's observations entirely confirm these statements, and yet the use of morphine in Bright's disease is denounced with little less than horror by most practitioners, though they all confess that they have never tried it—that, indeed, they dare not do so. Morphine hypodermically employed is of conspicuous benefit in the shortness of breath of uremia. This may be due to different causes. With some patients the compensatory hypertrophy gives way and they suffer from cardiac dyspnea, in all respects similar to that from valvular defects with insufficient compensation, notably sleep in aortic regurgitation. The paroxysmal shortness of breath prevents sleep; on falling asleep they are soon wakened by distress of breathing. The patient is compelled to start up in bed panting for air, or the sleep may be distressed and harassed by Cheyne-Stokes breathing. This distressing condition, whether due to deficient compensation in Bright's disease, or to valvular defects, is almost invariably relieved by hypodermic injections of morphine, and several hours' refreshing sleep are secured, to the great relief and comfort of the patient, who on the following day is refreshed, and takes, digests, and assimilates his food better. Morphine can scarcely be too highly recommended in such a condition, and although it does not cure, it delays the end and greatly lessens the distress of the declining days of life.

Uremic asthma, again, yields promptly to hypodermic injections of morphine. On the other hand, persistent distress of breathing may be due to dropsy, the lung being hampered by an abundant serous effusion into the cavity of the chest. It need scarcely

be said that such a condition is not improved by the use of morphine.

The headache and sleeplessness occurring in uremic patients can generally be removed by the hypodermic injection of morphine. The writer has not given this treatment in uremic convulsions or coma, but he has largely used it in many cases of uremia with other troubles, and is sure that morphine may be given to such patients with every prospect of benefit and no risk of harm.

REPORT OF A DEATH FOLLOWING IMMEDIATELY AN OPERATION FOR NASOPHARYNGEAL ADENOIDS UNDER CHLOROFORM, WITH REMARKS ON CHLOROFORM ANESTHESIA IN THIS OPERATION.

In concluding an article with this title in the *New York Medical Journal* of October 29, 1898, HINKEL tells us that the statistics show an exceptionally high mortality from chloroform anesthesia in the operation for the removal of lymphoid hypertrophies of the pharynx.

The observations of the Vienna pathologists show that sufferers from "adenoids" frequently belong to an abnormal constitutional type that has been found peculiarly susceptible to chloroform narcosis.

In view of the statistical and pathological data presented, the general use of chloroform in the operation for hypertrophied tonsils or nasopharyngeal adenoids is inadmissible.

TYPHOID FEVER IN INFANCY AND CHILDHOOD.

In a valuable article with this title in the *Philadelphia Medical Journal* of October 15, 1898, J. P. C. GRIFFITH tells us that treatment need occupy but little of our attention, as there is little to be said that does not apply equally well to adult life. Medicinal treatment is purely symptomatic, as in adults, and is less often needed. Rest in bed is, of course, required, no matter how much the child wishes to be up. A milk diet is to be preferred. No purgatives should be given to overcome constipation, enemata being employed in place of them. With regard to the use of the bath, careful judgment is to be employed in giving it to children. Some do not bear the plunge at all well. This is particularly true of younger children. Certainly there is, as a rule, at no period of childhood the need to use water at as low a temperature as in the case of adults. At the Children's Hospital of Philadelphia it is the custom to employ the graduated bath, placing the child in the tub with the water at a temperature of 95° and cooling it down to 85°, or occasionally, with older children, to less than this. In nearly all cases this is quite as effectual as the cool bath, and much less likely to cause excitement from fright. Very frequently, indeed, sponging answers every purpose. Even a tepid bath may sometimes answer well. It must be remembered that many children bear elevated body temperatures remarkably well, as one of the cases detailed illustrates, and that the disease in childhood is likely to run a shorter course. We can, therefore, often afford to let the fever alone. If it is true of adults it is still truer of children, that hydrotherapy is not to be used as an unalterable plan of treatment, no matter what its effect, and merely because the temperature has reached a certain figure. If it is used according to any such method, it is capable, particularly in children, of doing often far more harm than good.

ETHER NARCOSIS.

The comparison of ether with chloroform as an anesthetic continues to be a subject of interest, and, in Europe especially, contributions to the journals upon this subject are frequent and often the results of long series of observations and experiments. In this country the popularity and reputation of ether seem to be fixed, and chloroform is almost everywhere regarded with some suspicion, in spite of some of its very attractive qualities. The very generally recognized disadvantage which ether has is undoubtedly the increased secretion of mucus and saliva which occurs during its administration. In the *Archiv für Klinische Chirurgie*, B. 57, 1898, Hölscher gives some conclusions upon the action of ether, which are based upon a series of experiments upon animals. His paper is long, and his conclusions are that the ether vapor has very little irritant effect upon the bronchotracheal mucous membrane; that the tracheal râles during ether narcosis are caused by the aspiration of the secretions, salivary and mucous, from the mouth; that the affections of the air-passages following ether narcosis are caused by this aspiration; and that the increase in the flow of saliva depends largely upon local irritation by the vapor, but that central influences also play a part in this process.

It is a good thing to bear in mind that the secretions from the mouth are responsible for the tracheal râles, for it puts the prevention of the condition within the range of easy possibility, and also imposes a distinct responsibility upon the anesthetist. Of course patients are very variable in their behavior during etherization in regard to the amount of secretion and the character of the respiration, and in some it would be practically impossible to prevent the flow of some of the saliva and mucus into the trachea. It is probable, however, that it is only when the secretions reach the bronchi and their large branches that there is any great danger of pulmonary involvement. When the secretions do reach the large bronchi or the bronchioles and cause a bronchitis or a bronchopneumonia, the consequences are apt to be serious, especially in elderly or alcoholic patients.

Extreme care on the part of the anesthetist, both as to the amount of ether given and in keeping the mouth clean and the head and jaw in the correct position, is the only thing which can give us security from unpleasant experiences in a certain number of instances of the administration of this anesthetic. The dangers in the use of chloroform depend upon inherent poisonous qualities in the drug, and can be guarded against only by watching with extreme care the amount given and its effect upon the circulatory apparatus. Even with the greatest care cases will occur in which, on account of some latent cardiac trouble or of personal idiosyncrasy, alarming or fatal symptoms will develop, with very little time for satisfactory treatment.

In the case of ether, the dangers depend largely upon causes which are mechanical and can be prevented by mechanical means, leaving out, of course, any such event as the overwhelming of the patient with the drug, which should never occur and can only occur from carelessness. If the whole bronchial mucous membrane were pouring out an excess of secretion during etherization, it would be a very difficult matter to give the drug successfully; but if the secretion comes almost entirely from the mouth, it must be an easy matter to control.

In operations with tracheotomy, the presence of the tube in the trachea is irritating and causes an extra secretion of mucus in the trachea; and if this secretion becomes mucopurulent and the inflammation extends downward, the consequences are self-evident. In ordinary etherization we have not this source of irritation, and whatever sepsis is introduced must come from the mouth.—*Medical Record*, Oct. 22, 1898.

THE PREVENTION AND TREATMENT OF TRACHOMA AT THE HOUSE OF REFUGE.

From a large experience in an epidemic of trachoma GILFILLAN concludes that it is best to divide trachoma, clinically, into three forms, or classes:

The mild cases, where only the lower lids are involved. In these cases the patients are often not aware that they have any trouble with their eyes. On examination one finds a dozen or more granules on the conjunctiva of the lower lid. There is slight lacrimation, but no other symptom.

Ordinary cases, where both the upper and the lower lids are involved. In these the appearance of the conjunctival surface of the lids is like a nutmeg grater, being studded irregularly with granules. Lacrimation and sticking of the eyelids together in the morning, besides a rough feeling of the eyes as if something were in them, are present in these cases.

In chronic cases the granules have broken down, leaving the conjunctiva in appearance red, velvety, and succulent. Lacrimation and photophobia are marked symptoms. Oftentimes there is a growth of blood-vessels on the cornea.

Of his three hundred and twenty-five cases of trachoma, at least a hundred and fifty were of the first class. Many of them were very mild, the disease having only just begun. Every night and morning half a dozen drops of the following solution was instilled into the eyes in this class of cases:

℞ Tannic acid, ℈ j;
Glycerin, f℥ j.
M. S.: Eye drops. Use twice a day.

Three times a week an application of sulphate of copper crystal (bluestone) was used on the everted lids. Often this was replaced for a time by the use of alum crystal (whitestone). All of this class did well and soon recovered. To show how fast they were discharged cured he appends a statement. When necessary he used Knapp's roller forceps.

After this operation an application was made twice a day with a camel's-hair brush to the everted lids of a 1-to-6000 bichloride solution. This was kept up for three weeks. Three times a week the application of the bluestone was also made.

Most of these operative cases are cured in from three to six weeks. Sometimes it is necessary to operate a second time in cases where there are large masses of granules. As a rule, the prognosis in the first and second class of cases is good.

INDICATIONS FOR THE APPLICATION OF THE OBSTETRICAL FORCEPS AT THE PELVIC OUTLET.

In the *New York Medical Journal* of October 29, 1898, ROOT tells us that the time to apply the obstetrical forceps at the pelvic outlet cannot be governed by fixed rules. This must rest with the operator, and requires a nicety of judgment gained only by careful study of each individual case. In skilled hands the application of the forceps is better made too early, or earlier than is absolutely necessary, than too late, for too late means disaster to mother and child. It is not possible to draw distinct lines for indications, but for convenience of study we may divide them into five groups:

The fault lies wholly with the *vis a tergo;* the head is more or less movable, and there exists no obstruction in front of the head: (*a*) the pains or uterine contractions are inefficient; (*b*) the umbilical cord is short.

Cases where the anteroposterior diameter of the head, though presenting, fails to engage in the corresponding diameter of the outlet, the head being more or less movable. Large head with (*a*) occiput anteriorly; (*b*) occiput posteriorly.

To produce complete flexion in a partially extended head that cannot be flexed by the expulsive forces without undue duration of labor or by the hands of the accoucheur, the head being more or less firmly fixed.

To shorten the second stage of labor for the relief of maternal suffering.

For the immediate relief of the child.

When uterine contractions are inefficient there is a want of expulsive force exerted upon the fetus. The cause may rest with the uterus itself; it may arise from the delicate muscular and nervous organization of the patient; from impaired health, as in cases of albuminuria, or wasting disease; and from weariness produced by a prolonged first stage.

When there is a short cord or a cord shortened by coils about the neck. In this group of cases the head moves forward and recedes without material advancement. The to-and-fro movement of the head is especially marked in cases of short cord. The recession of the head differs in character from recession following relaxation of a uterine contraction or of expulsive efforts. It has more the appearance of being pulled back, and the shorter the cord the more marked is this characteristic, which may be considered diagnostic. The cord shortened by coils about the neck will produce a similar effect. When the conditions under (*a*) and (*b*) exist, the natural rhythm of the pains is soon disturbed or destroyed. The pains become short in duration and "choppy" in character. The expulsive efforts are unsteady and ineffectual.

It is worse than folly to allow these conditions to exist longer than is necessary to determine their existence.

In this group of cases the application of the forceps is easy, and extraction should be attended with little or no danger or added suffering to the mother, except in cases of short cord. Hence the danger is chiefly to the child. The cord may be torn from the umbilical ring or the placenta may be prematurely loosened. This danger is not light, and may be obviated to a certain extent if a skilled assistant will use abdominal pressure over the uterus to facilitate its descent with its contents into the pelvis.

In this group the difficulty lies in front of the head and not behind it. There exists some disproportion between the head and the birth canal, due to oversize or faulty position of the head or to undersize of the outlet.

The pains are strong and the expulsive efforts are well directed. But all efforts meet with defeat because of the opposing diameters of the bony outlet. The sphere of their circumference is filled by the presenting portion of the head when advanced by a contraction. The head fills the space in proportion to the compression it has undergone.

The caput succedaneum extends beyond the tuber ischii and protrudes from the vaginal orifice. Each effort at expulsion will seem to promise delivery of the head, but examination will find the parietal bosses behind the tuber ischii and the inion behind the symphysis pubis. The anteroposterior diameter of the head that is presenting is too long to allow the inion to pass from under the pubic arch or over the perineum if it is posterior. During the absence of pain the head recedes—freely if the cavity of the pelvis is roomy, and less so if not.

The movement of pseudoextension ob-

served when the head is pushed down by a contraction, and which so often deceives the inexperienced or careless into believing that the head is advancing, is due to the head revolving slightly upon its transverse diameter in the effort made to pass the outlet. The gradual increase in the size of the caput succedaneum adds to the deceptive promise of delivery made to the disheartened patient.

Vigorous efforts, voluntary and involuntary, will continue according to the strength and endurance of the patient, but they will sooner or later assume the characteristic behavior of expulsive efforts that meet with obstruction. If relief is not given the patient begins to show signs of exhaustion. The uterus becomes irritable and sensitive to the touch; pains are excruciatingly painful and "choppy," overthrowing the equipoise of the patient's nervous system. The soft parts become swollen, contused, and edematous, while the child dies or is born *in extremis*.

No case should be allowed to reach this pitiable and dangerous stage before relief is given. The diagnosis should be made early. The changed character of the pains, and the behavior of the patient while under their influence, should give early warning to the accoucheur of what lies before him. The forceps should be applied and delivery effected before signs of exhaustion begin. Greater traction force is needed here than in the first group, with proportionately greater compression of the head.

The integrity of the perineum and the lower third of the vagina are greatly endangered; laceration is more than likely to occur, and is inevitable if the inion is situated posteriorly, unless the head is very small.

To produce flexion of a partially extended head that is more or less firmly fixed. The conditions that give rise to this form of dystocia usually occur in the cavity of the pelvis.

The cases the author includes in this group are those where rotation has taken place or is nearly completed, so that the application of the forceps to the sides of the pelvis applies them to the sides of the head. This form of arrested head usually occurs just within the outlet. It is chiefly due to a hand of the fetus falling under the chin, or some other displacement of an arm that prevents flexion. The fetus is crowded into the pelvis by the uterine contractions, and by retractions when the fruit-water is spent. The forceps applied, traction is made horizontally until the head reaches the floor of the pelvis and presents well at the outlet.

The advance of the head gives the chin a chance to escape the obstructing hand or arm, when flexion is readily accomplished by lowering the occiput if in front and raising it if posteriorly. After flexion is produced delivery of the head in anterior positions is easy, with or without the further use of the forceps.

The diagnosis of this difficulty is not easily made, and must be largely presumptive.

In cases where the diagnosis may be reasonably assumed, the inlet is wide and the cavity fairly roomy. The adjustment of the forceps blades points to the difficulty. One blade will slip easily into place, while its fellow will meet with an obstruction that prevents it from reaching home. This can be due to the tip of the advancing blade coming in contact with the shoulder of the same side that has been driven into the pelvis and passed the side of the face. The projecting hand fills the groove between the shoulder and the side of the face. It is then difficult to insinuate the tip of the blade between the shoulder and the side of the face, but when this is done the hand or arm is pushed away and the blade slips home. Difficulty in adjusting the tip of one blade, followed by ready flexion and delivery, should point to a displaced hand or arm.

The forceps is indicated for the relief of maternal suffering. The greatest danger from its use for this purpose arises from the resistance of the perineum terminating in its rupture. Whether the cause lies in the *vis a tergo*, the *vis a fronte*, as supplied by the forceps, or in both combined, the too rapid advancement of the fetal head endangers the perineum. In this group of cases the *vis a tergo* is efficient, the patient is in good condition; there is no obstruction offered the advancing head except that of a slowly dilating perineum. But the patient suffers and frets under the burden of pain laid upon her. To relieve her the forceps is applied; but it must be remembered that traction by means of the forceps lends added power to the force behind. If these combined forces are out of proportion to the dilatation of the soft parts, rupture is inevitable and unnecessary damage is done.

If the time for applying the forceps is rightly chosen and the forces in hand are well controlled, we may expect the happiest results. We may not only escape a possible rupture from bad use of the forceps, but may prevent a probable rupture if the case had been left to spontaneous delivery.

The period of suffering may be shortened

from half an hour to two hours with absolute safety and comfort to both mother and child. At no time, other things being equal, should this boon be denied the patient.

A forceps operation is usually undertaken for the greater safety of mother and child. In this group we choose to deal with those cases in which the child alone is considered: (*a*) When the child is debilitated and small and is not likely to withstand the vicissitudes of labor, though of average duration; (*b*) when the mother gives the history of having borne children that have died during labor, pending spontaneous delivery, or soon after; (*c*) when the head has been upon the perineum, under pressure long enough to jeopardize, or better, before it jeopardizes, the life of the child; (*d*) in cases of hemorrhage *in partu*. An escape of blood during an intermission of pain and recession of the head points to a premature separation of the placenta, or laceration in some portion of the birth canal. When this occurs, little time should be lost in determining the site of the hemorrhage. If not found in a laceration, we must act upon the supposition that the hemorrhage is placental and apply the forceps. The integrity of the perineum should be of secondary consideration, for a wound well repaired will heal more easily than life can be restored to the child.

INJURIES OF THE GALL-DUCTS.

PORTER (*American Journal of Obstetrics and Diseases of Women and Children*, November, 1898) deals in his communication only with the cystic right and left hepatic and common duct, and more especially with the common duct because its great length and less protected position render injuries to it more frequent than injuries to the hepatic ducts, while injuries to the cystic duct present no features differing in practical import from injuries of the gall-bladder.

The general direction of the common duct is downward along the right border of the lesser omentum to the inner side of the descending portion of the duodenum, where it empties by piercing the walls of the gut obliquely, thus making the opening valve-like in action. Just before piercing the gut the common duct receives the duct from the pancreas.

By passing the finger from left to right along the lesser omentum until the right margin is reached, then hooking the finger under this margin through the foramen of Winslow, the common duct may be lifted forward. The common duct lies in front of the vena portæ, to the right of the hepatic artery, and is crossed in front by the pyloric and gastroduodenal arteries. The superior pancreatico-duodenal branch of the latter artery lies in close relation to the right side of the lower two-thirds of the common duct. It is important that the changes in the position of the liver and the consequent changes in the position, direction, and relations of the ducts, due to relaxation of the abdominal walls, etc., be borne in mind.

Injury to the hepatic ducts is usually accompanied by injury to the liver also. This does not apply, of course, to those cases in which the injury is produced, either intentionally or by accident, in the course of operations. One would expect injury to the common duct to be complicated usually by hemorrhage, owing to the close relation it bears to numerous large blood-vessels; but this does not seem to be the fact, judging from the few cases reported. This may be accounted for by the relatively greater power of resistance of the blood-vessel walls.

No case of rupture of the gall-bladder or gall-ducts without penetration of the abdomen is reported in the "Medical and Surgical History of the War of the Rebellion." The cases reported show the most frequent cause to be forces which act in a crushing manner, such as a blow on the abdomen or the passage of a wagon wheel over it. The presence of gall-stones predisposes to rupture of the gall-ducts from trauma, and their presence may cause ulceration and perforation.

The symptoms, mentioned in the order in which they usually occur, are pain, shock, ascites, acholia, jaundice, and other symptoms of cholemia, peritonitis, and inanition. Pain is usually severe, and most marked in the right hypochondrium. The pain may, however, be severe in other regions of the abdomen without there being any signs of injury to account for it, and slight or entirely absent in the region of the ducts.

Shock is generally pronounced and the reaction therefrom rather slow. So-called secondary shock or unduly prolonged shock means hemorrhage and demands immediate celiotomy. It is possible for the shock to prove fatal in these cases through injury to the solar plexus.

In cases where the lesion is of such a nature as to divert nearly or quite all of the bile from the intestine into the cavity of the

peritoneum, ascites develops rapidly. Estimating the daily quantity of bile at two and a half pounds, as given by Flint, we can appreciate the diagnostic importance of this symptom. In a case of rupture of the gall-bladder reported in Holmes' "System of Surgery" (vol. ii, p. 419), marked distention of the abdomen was noted two days after the injury. In the writer's own case it was not noticed by the attending physician until about a week after the injury, but it recurred to the extent of ten pints in four days after tapping. The ascites is usually general, but may be localized by the formation of adhesions or by the filling of the lesser cavity of the peritoneum. This latter would be more likely to occur in cases of rupture of the common duct at the margin of the foramen of Winslow. Filling of the lesser cavity of the peritoneum with bile would produce an ascites of the upper abdomen, which would soon become general unless the foramen of Winslow were closed. The ascites may be general at first, and, after tapping, become localized.

The degree of acholia will depend upon the completeness of the diversion of the bile from the intestine, and is therefore incomplete in rupture of the cystic duct, of either of the hepatic ducts, and in small perforations of the common duct. This is also true of jaundice, and, indeed, of all symptoms which are due either to the absorption of the excretory elements of the bile or to the absence from the intestinal canal of the secretory elements of this fluid.

Jaundice is more likely to occur in those cases wherein the escape of the bile into the peritoneal cavity is preceded by obstruction of the bile ducts, and in those cases in which the bile within the peritoneal cavity is subjected to pressure. Jaundice is not a constant symptom of escape of bile into the peritoneal cavity.

If the ducts are healthy at the time of injury the principal source of infection is the bowel, through regurgitation along the duct. Other things being equal, the danger of infection from this source increases in proportion as the injury approximates the bowel. However, the valve-like character of the opening of the duct into the bowel renders infection from this source less likely than one might on first thought suppose.

Bile, if aseptic, will not produce peritonitis. Practical experience has shown that the fear surgeons formerly entertained of bile within the peritoneal cavity is unfounded. Lane reports a case of rupture of the gall-bladder, which recovered after operation, in which for five weeks a considerable quantity of bile was present in the peritoneal cavity.

In case the bile is completely diverted and the patient lives long enough, symptoms of inanition will develop.

Fatty stools seldom occur. This condition of the stools, together with other signs and symptoms of faulty digestion, would no doubt be more likely to arise in cases where the rupture occurs close to the opening of the pancreatic duct, as in such cases there might be escape of the pancreatic juice into the abdomen.

Mental hebetude, peevishness, subnormal temperature, and slow pulse are usually present. If peritonitis supervenes the pulse will be quickened and the temperature will rise, but not in the same degree as would occur in an equally severe peritonitis from other causes.

Marked infection may be present with slight or no elevation of the temperature and very little acceleration of the pulse. This influence of cholemia on the pulse-rate and temperature in the presence of infection is an important clinical fact.

A satisfactory diagnosis cannot be made without opening the abdomen. Exploratory celiotomy should be promptly done in all cases of injury to the abdomen in which the symptoms are such as to arouse any suspicion of serious injury to the abdominal contents.

Cholemia, acholia, and infection are the conditions to be avoided or remedied. Perfect drainage will obviate the first and last, but to obviate the danger arising from acholia we must devise some means by which at least some bile may get into the intestinal canal.

Cystectomy with closure of the duodenal end is the method of choice in cases of rupture of the cystic duct. If accessible the rent may be closed by sutures. In rupture of either hepatic duct it may be possible to close the rent by sutures; but in most, if not all, cases of complete division of the duct the use of gauze drainage or combined gauze and tubular drainage will be the only feasible method of treatment. To this it would perhaps be well to add ligature of the duct on the duodenal side of the rent. This will lead to a permanent biliary fistula if the patient survives, but the danger from acholia would perhaps not be great, and we can scarcely hope for a reestablishment of the flow of bile

through the normal channel under these circumstances. If the perforation be small, it may close and the patient recover if drainage be established. Landerer's case recovered under repeated punctures. Kernes' case recovered after the abdomen was opened, dried, and then closed without drainage.

Injuries of the common duct, when they result in complete diversion of the bile from the intestine, are inevitably fatal, unless by some means the diversion be overcome. That large quantities of bile may be discharged through abdominal fistulæ for an indefinite period without harm to the individual is, of course, a matter of frequent experience, but the writer knows of no case which disproves the statement that complete diversion of the bile from the intestinal canal is, if not remedied, fatal. Small openings in the common duct may be sutured, or, if this is not feasible, they may be treated with drainage, in the hope that the opening will close spontaneously.

When, from an examination through an abdominal incision or from an examination of the stools, it is learned that no bile is flowing into the bowel, no time should be lost in reestablishing this flow. End-to-end approximation of a completely divided common duct by suture or other means is possible, perhaps, in some cases.

If both ends of the divided duct can be found, the best method to adopt would be ligature of the bowel end and implantation of the liver end into the duodenum. A method less ideal, no doubt, but more often practical, would be closure of both ends of the divided duct, in case they can be readily found, and cholecystenterostomy. In case the injury to the duct cannot be easily found, and the condition of the patient is such as to demand that the operation be done quickly, it would be best, perhaps, to do a cholecystenterostomy and use a gauze tampon for the double purpose of establishing drainage and encouraging the flow of bile through the newly formed channel, and thus hasten the closure of the rent in the duct. If haste is not essential the union of the gut and gall-bladder may be made by suture; but, in many cases, to save time is to save life, and for this reason the use of the Murphy button is advised in all cases where speed is essential. In cholecystenterostomy with closure of the common duct it is important that the anastomosis be made as high in the bowel as is possible, in order to avoid fatal or serious acholia.

Cases will present themselves now and again in such deplorable condition that radical operation will be out of the question. Under such circumstances the operation should comprise the doing, in as quick and simple a way as is possible, of those things only which are immediately necessary to save life, such as the establishment of drainage when life is threatened by peritonitis, or the use of gauze packing for hemorrhage. The immediate danger having been averted by these measures, a radical operation may be done later on when the patient is better able to stand it.

Theoretically one would seem warranted in expecting much relief from the symptoms due to the absence of bile from the intestines from the administration of inspissated ox-gall and salol, or other intestinal antiseptic, together with the use of predigested (emulsified) fats; but in the reported case the use of salol and ox-gall seemed without effect. No emulsified fats were given, as no fat was seen in the stools.

In conclusion the author emphasizes the following points:

Fatal inanition may be caused by an injury which results in a complete diversion of the bile from the intestines.

Jaundice may be absent though a large quantity of bile is thrown into the peritoneal cavity.

Cholemia and inanition combined may keep the pulse-rate and temperature normal, or even below, in the presence of marked asepsis. Acting singly these conditions have the same effect, but in lesser degree.

Jaundice is not always present in cholemia.

Porter concedes that the truth of this last proposition may be open to question, but the burden of proof rests with those who deny it. The other conclusions are, in his opinion, supported by evidence that is incontrovertible.

A SIMPLE TREATMENT DIRECTED TO THE RELIEF OF THE LOCAL CONGESTION INCIDENT TO PROSTATIC HYPERTROPHY.

NOGUES (*Annales des Organes Génito-Urinaires*, quoted by *Monatshefte für Praktische Dermatologie*, Bd. 27, No. 8), after stating the well known fact that congestion of the prostate rather than absolute enlargement of this gland is often responsible for obstruction to the passage of the urine, urges as a means of combating this congestion regulation of

the circulation, systematic evacuation of the bladder, and abdominal massage. The results of this latter procedure were extremely satisfactory, especially in the early stages of prostatic enlargement and urinary obstruction. The acts of micturition became painless and were much less frequent, especially during the night. Even in cases of complete retention massage seemed serviceable, since the urine became clearer and there was less bleeding.

ESSENTIAL RENAL HEMATURIA.

DEBAIRIEUX (*Annales des Société Belge de Chir.; Annales des Organes Génito-Urin.*, No. 9, 1898), stimulated thereto by a case of rebellious hematuria dependent upon a chronic unilateral nephritis reported by Keersmaecker, contributes the interesting details of a woman twenty years old who in April of 1895 presented herself with a history of having suffered from hematuria for six months. This began with an attack of grippe, and was accompanied by pain in the left side of the belly, the iliac fossa, the lumbar region. This pain was habitual, though not constant, and was sometimes severe enough to prevent sleep. Occasionally it presented the features of true nephritic colic, running along the course of the ureter toward the labia majora, being accompanied by nausea and vomiting. At times this was so intense as to cause the patient to faint.

There were not the classical symptoms of stone, there were no pus cells, nor tube casts in the urine, nor crystals of any kind. The reaction was faintly acid and the albumen was exactly proportionate to the quantity of blood. The urine was sterile; there was no polyuria; occasionally perfectly limpid urine would be passed—once it remained so for two days.

The renal origin of the blood was decided upon because of the absence of all vesical symptoms and the presence of pain and tenderness in the region of the kidney. The urine passed in three glasses showed an equal quantity of blood in each. On irrigating the bladder the fluid returned without trace of blood. After having irrigated the bladder and removed the catheter, bloody urine could be drawn five minutes after.

Diagnosis rested between neoplasm and calculus. It was decidedly in favor of the latter. On operation the kidney was found normal in appearance, dimensions, and position. The kidney was split and nothing abnormal was found. The kidney was sewed and the wound closed. From that time bleeding ceased, and the patient has been perfectly well ever since.

The second case bled for five months, and was opened by Broca. The kidney was found healthy and was sutured in position. The bleeding ceased immediately.

The third case, having suffered in 1878 from symptoms of nephritis, passed bloody urine from that epoch until 1886, when Sabattier, believing a calculus was present, practiced nephrectomy. The kidney removed was perfectly healthy. Hematuria ceased after operation and the patient was well more than a year later.

Another patient suffered from hematuria in December of 1887. This was followed by apparent cure, but in 1889 the hematuria recurred and was almost continuous. Because of the history Senator diagnosed hemophilia; Nitze demonstrated that the blood came from the right ureter. In 1890 Sonnenberg practiced nephrectomy. Histological examination showed only very small isolated portions of the kidney affected with interstitial nephritis. Hemorrhage ceased after the second day following operation. Seven months later the patient was still well.

These four cases were all women.

The fifth case, that of a man aged fifty, suffered from abundant hematuria after taking a cold drink; at first intermittent and relieved by rest, it finally became continuous and exhausting. A slight pain in the left side furnished the indications for operation. Nephrectomy was practiced. The left kidney, though anemic, was perfectly healthy. The patient got well.

The sixth patient was a sailor, who suffered over twelve years from hematuria associated with pain in the left kidney. Lauenstein performed pyelotomy, hoping to find a stone, but in this he was disappointed. The patient recovered and had no recurrence of bleeding.

The seventh case suffered over five years from nephritic colic of the right side and hematuria. For two years it had become continuous. Abbe practiced nephrotomy, introduced his finger into the pelvis, and found only the extremity of one pyramid covered by a light gritty deposit, which was scraped away. After the fourth day hematuria ceased and never recurred. Pain was also relieved.

Many other cases are reported of both nephrotomy and nephrectomy, all failing to show any adequate lesion in the kidney.

The bleeding seems to be dependent upon

an obscure anatomical condition, one which cannot even be detected by minute microscopic study of sections of the kidney substance. The condition has been termed essential renal hematuria or renal hemophilia. The characteristic of this form of hematuria is that it is associated with no demonstrable anatomical lesion, that it is refractory to all medication, and that it disappears either spontaneously or as a sequel of an operation the efficacy of which cannot be clearly explained.

The theory that the bleeding is due to an angioneurosis finds its support in the fact that this condition is much more frequent in women than in men; also operations other than those performed on the kidneys are followed by a cure of the affection. Thus Passet and Picquet, having through a mistaken diagnosis performed hypogastric cystotomy, cured the patient.

As to the treatment of this affection nephrotomy is the operation of choice, followed by nephrectomy if the kidney is markedly diseased.

THE RADICAL TREATMENT OF PROSTATIC HYPERTROPHY.

FULLER (*Medical Record*, Nov. 19, 1898) thus describes his operation: The patient is placed flat on his back, neither the Trendelenburg position nor the Petersen bag being commonly found necessary. The bladder is carefully washed out, and then left moderately distended, to the extent of from eight to twelve ounces. The next step is to open the bladder suprapubically. The forefinger of the left hand is then introduced into the bladder, the location and extent of the prostatic obstruction are determined, and the vesical opening of the urethra is located. In the right hand is grasped a pair of serrated-edged scissors with a long handle. These scissors are slipped along the left forefinger to the urethral opening, and are made to cut through the bladder wall in that region. The cut extends from the lower margin of the internal vesical opening of the urethra backward for an inch to an inch and one-half. The blades of the scissors being rough and serrated, make an incision which bleeds but little. Then one of the forefingers, whichever the operator may find the more convenient, is slipped through the vesical hole made by the serrated scissors, while at the same time the fist of the other hand makes firm counter-pressure against the perineum. By means of this counter-pressure the prostatic growth is brought well into the reach of the forefinger, which is employed all this time in enucleating the prostatic obstruction, *en masse* or piece by piece, as the case may be. The enucleation can be easily and speedily accomplished in this manner, and should not be desisted from until all the lateral and median hypertrophies, as well as all hypertrophies along the line of the prostatic urethra, have been removed. The vesical walls at the base, as elsewhere, are very elastic and dilatable, so that it will be found that the little cut made through the bottom of the bladder will be large enough to admit of the passage through it of the enucleated prostate.

A perineal section is then made, and a large-sized (No. 26 American) soft-rubber tube is passed through the perineal cut, and the cut through which the prostate was enucleated, into the bladder. After this, hot-water irrigation is employed for some minutes, to wash out blood-clots and to stop oozing. Then the suprapubic wound is closed by a deep layer of catgut sutures, which include the bladder wall, and by a more superficial layer of silkworm-gut (Florentine) sutures. About in the middle of the cut the catgut stitch is omitted and a deep Florentine-gut suture is taken, which includes the vesical wall and the whole extent of the lateral abdominal wall. This suture, however, is not tied at the time of operation, thus allowing a rubber suprapubic drainage tube to remain temporarily in position. At the end of four or five days this suprapubic drain may in most instances be removed; then this last Florentine ligature can be tied, thus entirely closing the suprapubic cut. It is best not to remove these Florentine sutures till after the patient is up and about, as without their firm support there is oftentimes a tendency for the soft scar tissue of the wound to give, thus allowing a considerable spreading of the abdominal structures.

Some hypertrophies will be encountered which do not admit of enucleation by the finger in the manner described, owing to the abundance and denseness of the fibrous tissue helping to constitute them. In such instances the writer has found it necessary to introduce prostatectomy forceps through the hole made in the vesical floor, and, after seizing a piece of the hypertrophy, to twist it free. If sufficient tissue is not removed by the first twisting, the instrument should be reintroduced, and so on, till all obstruction has been taken away. On one or two

occasions the writer has encountered tissue so dense and adherent to the vesical wall that the forceps and the twisting process have seemed dangerous, owing to the force they would necessitate. In such unusual cases the tissue should be cut away, and for that purpose the writer recommends Jessop's prostatic scissors. He also favors two suprapubic drainage tubes instead of one, following the example set by Guyon in the after-treatment of cases in which vesical growths have been removed suprapubically.

In order to save time, and also because he finds them unnecessary, the writer has discarded the layer of catgut sutures and now employs simply the one layer of silkworm-gut to close the wound. One of these sutures after passing through all the abdominal layers includes also the bladder wall at the upper portion of the vesical incision, while another one in like manner includes it at the lower portion of the incision. In this manner the vesical is kept up in close apposition to the abdominal wall, so that there may be no escape of extravasated fluid into the space of Retzius. In doing this operation the author very rarely ties a blood-vessel, thereby saving considerable time. In order to be able to perform prostatectomy of this description with neatness and despatch, a surgeon should have good control of his forefinger and be possessed of some strength of wrist and forearm.

The writer finds the records of twenty-seven personal cases of prostatectomy, most of which were subjected to his method. These cases he has divided into two classes: those in which all the larger surface arteries were felt to be markedly atheromatous, and those in which such changes were absent or not prominently evident.

Five of the writer's cases come under the first heading, and twenty-two under the second.

Out of the five patients of the first class three died after operation. One of them, who was apparently progressing favorably, experienced a severe seizure of cerebral apoplexy on the third day. In another, the post-mortem showed extensive postoperative hemorrhage into the space of Retzius and underneath the peritoneum, occasioned by the calcareous condition of the blood-vessels. The other died suddenly on the fifth day, perhaps of thrombosis.

Out of the twenty-two cases of the other class two died—one of suppression and shock, and the other of peritoneal symptoms, but of just what nature, in the absence of autopsy he could not determine. Many of these latter cases were very bad apparent risks. Some of them were operated upon in emergency, it being impossible to relieve the bladder except by aspiration. Most of them were suffering also from the effects of vesical infection, and in a good percentage of these cases the infection had ascended to the renal pelvis.

Two cases, both earlier ones, passed from Fuller's view with suprapubic fistulæ. They were careless individuals from the lower social strata. He does not feel that such an after-lesion need be reckoned upon as at all likely or necessary, provided a patient cooperates with the surgeon. A postoperative inconvenience sometimes complained of, and which is usually of temporary duration, is the loss of a drachm or so of urine when there is some vesical pressure as a result of bodily activity. In one instance vesical incontinence persisted after operation, due, he is inclined to think, to chronic sclerosal perivesical inflammation. As a result of his experience he would avoid operating on individuals of the first class except for the relief of suffering, since the chance is against their recovery. The value of the operation, with reference to the other class, speaks for itself.

THE OPERATIVE TREATMENT OF CLEFT PALATE.

OWEN (*British Medical Journal*, Nov. 5, 1898) says that the observations in connection with the operative treatment of cleft palate arrange themselves under three headings: (1) Before the operation; (2) the operation; and (3) after the operation.

The operation not being one of immediate urgency the surgeon can choose his time for it, making such preparations as will, if efficiently carried out, add greatly to the prospects of securing a completely successful result.

Thus, if the child is brought looking ill or poor, if it is found on inquiry to be liable to severe attacks of diarrhea, or to cough, or to vomiting, the operation must be put off and attention directed towards procuring the general and particular improvement of the child. If the tongue be foul and coated, a change of air and diet should be ordered, and the child put upon a course of rhubarb and soda mixture, which has a most beneficial effect in the treatment of chronic dyspepsia in children. Particular attention

should always be paid to the teeth. Every carious tooth should be extracted, or cleaned and filled, and to diminish to the utmost the risk of the line of the suture in the palate becoming infected from the pathogenic micro-organisms the mouth and gums should be for some days washed over with a saturated lotion of boracic acid with glycerin.

No one would propose the performance of a plastic operation upon the hand, for instance, until the area of operation and its neighborhood had been rendered aseptic, and although it is not practicable to effect as much in regard to the mouth, still the surgeon should accomplish his utmost in that direction. It is usually found that there is something for the dental surgeon to do before the mouth is in a condition to invite the performance of a staphylorrhaphy.

With regard to the important matter of the presence of pharyngeal adenoids and of enlarged tonsils, it is sometimes advised that the operation upon the palate should precede that upon the tonsils and adenoids, but such advice is not sound. The child has hitherto been in the habit of breathing through a wide palatine cleft, and if this is suddenly closed by operation provision should surely have been made for securing a passage for the air as free as possible; and we know how seriously the airway may be blocked by tonsillar and adenoid disease. The surgeon should amputate enlarged tonsils at least ten days before dealing with the palate, and if, on doing so, he cuts across a septic or tuberculous focus, as often happens, he had better wait a little longer still before dealing with the palate; and when adenoids are conspicuous through the cleft, it is surely better that they should be scraped away before operating on the palate.

Just before the operation on the palate the nurse should give a beef-tea enema with a little brandy.

The anesthetic is chloroform, administered partly by a mask and partly by a Junker's apparatus, but the child should not be too deeply under the anesthetic. It surely must be an anxious time for the anesthetist when the operator keeps on insisting that the child is not sufficiently comatose. The child should now and then show signs of "coming round."

When the child is fairly under the anesthetic a strong suture is passed through the tip of the tongue, which is well pulled out before introducing the gag; in this way it can best be kept from rolling back against the soft palate when the hindmost part of the cleft is being dealt with. The child is then brought up to the end of the table and its head allowed to hang back so that the blood may have but slight chance of finding its way into the larynx.

As soon as the edges of the cleft have been denuded, an incision is made along the inner side of the alveolar process, and as this is apt to be followed by a good deal of bleeding it is well to pause here for a few moments and make firm pressure with a sponge so as to keep the bleeding under control. Then the raspatory is introduced, and the mucoperiosteal flaps are raised. But, as a rule, they cannot be shifted towards the middle line, and be sutured there without tension, until the alveolar incisions have been prolonged backwards into the soft palate. These incisions, which should be quite free, traverse the attachments of the levator and tensor palati, as well as that of the palato-pharyngeus. Then the attachment of the aponeurosis of the velum to the posterior border of the hard palate is divided with the curved scissors and the sutures are inserted. For the sutures Owen uses almost entirely silver wire, supplemented in some cases with horsehair. The wire sutures are inserted by a modification of Smith's needle, which is also made by Weiss. In the case of a complete cleft he inserts about ten or a dozen sutures.

A point of great practical importance is to have the lateral incisions made very freely. Indeed, the author makes them so free that, as the palate is being sutured, he uses them for the introduction of small pieces of sponge for removing blood from the front of the nasopharynx, and after the operation they together seem to be as wide as was the original cleft; insomuch that onlookers have sometimes asked if there is no fear of the flaps sloughing, or of the incisions failing to be obliterated. In neither of these respects, however, has there been any trouble.

The operation as thus described is extremely simple. It demands the use of no rectangular knives for the separation of the mucoperiosteum, and the expansions of the muscles into the soft palate are divided by a simple, straight incision. One great point in the operation is to have the edges of the palatine flaps adjusted without any tension whatever. The effect of tension after any surgical operation is apt to be disastrous.

Probably the child will vomit when he is "coming round," and if he does this just be-

fore he is moved from the table, so much the better. The act of vomiting does not in the least interfere with the line of suturing, as the writer has often assured himself, though, of course, if vomiting persists it may be prejudicial. The nurse must be told not to be surprised if the fluid ejected from the stomach is blackened by blood which has been swallowed. When the child is put back to bed his head should be slightly raised on a pillow, with the face turned down so that the blood-stained saliva may escape from the mouth and fall into some absorbent material.

Whether the mouth spray is used or not, a case every now and then goes wrong after operation. The child looks ill; his temperature runs up a degree or two; his tongue is coated; his breath is foul; the line of the palatine suture becomes swollen and unhealthy; and a thick, stringy, mucopurulent discharge collects about the roof of the mouth. The appearances are ominous and unmistakable. What has happened is that staphylococci have taken possession of the damaged tissues, and undergoing cultivation are spoiling or completely wrecking the surgeon's handiwork. The writer has at the present time an operation case of this sort in the Hospital for Sick Children. It was in a girl, with a complete cleft (and rather a wide one) of the soft, and of the whole of the hard, palate. Mr. Templeton took a thrust cultivation from it on the seventh day, and found the gelatin completely liquefied by vigorous staphylococci in less than thirty-six hours.

To say that Owen allowed the infective disease to run its course feebly expresses the truth; he could not stop it. But a fortnight after the original operation, when the sundered and swollen edges of the cleft began to look bright and clean, he had the child again under chloroform, and, having freshened up the marginal granulations, he brought the edges of the flaps together once more, and secured them by wire sutures, which he inserted quite wide of the cleft. To get the edges together without tension he introduced the raspatory once more by the lateral incisions, and again freely raised the mucoperiosteal flaps. The case has done extremely well, and it seems to promise as good a result as if the edges had adhered by primary union. This, indeed, is the chief point of his paper, and he regards it as one of great practical importance.

There is no factor so prejudicial to prompt union after staphylorrhaphy as septic infection, but after a child has undergone this infection we should probably be right in concluding that he could not undergo a second attack; that he has acquired by it a complete immunity.

THE COMPLICATIONS OF OPERATION FOR THE REMOVAL OF THE APPENDIX.

Dr. R. A. STERLING (*Intercolonial Medical Journal of Australasia*, Aug. 20, 1898; *New York Medical Journal*, Oct 15, 1898), in his third clinical lecture on the "Treatment of Acute Appendicitis," thus tabulates the more frequent complications that may upset all plans of treatment, even in the presence of the most careful technique: (1) General septic peritonitis. (2) Intestinal obstruction due to kinking of the recently separated intestine, or to adventitious bands. This is a possibility after any serious abdominal operation, and the author has related elsewhere a case of strangulation of the lower part of the ileum by such a band successfully treated by abdominal section. Three years previously the woman had been operated on for an ovarian tumor. (3) Retroperitoneal abscess. (4) Fecal fistula occurred in one of his forty-two cases, and healed spontaneously. The enterolith may be a cause, when not escaping with the discharges. (5) Multiple abscess of the liver. (6) Gangrene of the cæcum. (7) Phlebitis of the femoral vein. (8) Communication of the abscess with the rectum, vagina, or bladder. (9) Ventral hernia, which is said to be an exceedingly frequent sequel in America. (10) Fatal hemorrhage. Bryant mentions one case from ulceration of the deep circumflex artery; Fowler another from ulceration of the iliac vein. (11) Parotiditis. Paget saw five cases following perityphlitis. (12) Empyema. (13) Pericarditis.

THE TREATMENT OF GONORRHEA, ESPECIALLY WITH ARGONIN AND PROTARGOL.

NIEBERGALL (*Deutsche Militairärztliche Zeitschrift*, No. 6, 1898; *Centralblatt für Chirurgie*, No. 36, 1898) found that the duration of treatment with the albuminous compounds of silver known as argonin and protargol was not materially shortened. About ten days was required for the destruction of the gonococci, and ten days more for allaying of inflammation when cases came early with involvement only of the anterior urethra;

when the entire urethra was inflamed the treatment lasted much longer.

Because of the expensiveness of these products the author rejects them for use in the army; a twenty-day treatment for each individual will cost about $1.25. Thus 7000 cases, the constant average of the German army, would in a year's time cause over $100,000 to be expended on the silver salt.

He holds that irrigations with permanganate of potassium are as efficient and possess the merit of being extremely cheap.

FORCIBLE STRAIGHTENING OF SPINAL CURVATURES.

RIDLON (*Medical News*, Oct. 15, 1898) has attempted the operation of forcible straightening in sixteen cases of spondylitis, seven cases of scoliosis, and one case of rachitic curvature. The cases of scoliosis present nothing of sufficient interest to warrant detailed description. The youngest patient was nine years old and the oldest eighteen years; the shortest duration of deformity was eighteen months and the longest seven years. In all the cases the deformity was reduced one-third to one-half.

The patient in whom rachitic curvature was present was a male, seventeen years old, and the deformity dated from infancy. There had been no increase of deformity for fourteen years. The operation was performed on January 13, 1898, and nothing was gained in the way of correcting the deformity.

Taking into consideration all the cases of spondylitis, four patients had demonstrable abscesses, one had old sinus, and one had paraplegia. No harm appears to have arisen from the abscess complication, or from the presence of old sinus. The paraplegia appears to have been positively benefited. Two patients stopped breathing on being turned from the prone to the supine posture during the chloroform narcosis, but both began to breathe again after a short interval; in one instance the plaster-jacket was cut open and allowed to gape one inch, and in the other it was not. Only one patient showed any elevation of temperature after the operation. In this instance disseminated pulmonary tuberculosis was suspected, but not proven. The patient's temperature was not taken before the operation, and consequently it is not certain that the elevation was due to the operation. In two instances it was not possible to straighten with what seemed to the operator a safe amount of force. Pressure sores under the plaster dressings have been frequent. Their locations have been over the kyphosis, the scapular spines, the posterior iliac spines, and the sternum, and in various places about the head.

Relapsed deformity can usually be greatly reduced by a bearable amount of horizontal traction with backward bending over a foot-rest without anesthetization. Only two patients have as yet been allowed to get up and walk around, one in a plaster-jacket, and one in an anteroposterior leverage spine brace. In no case as yet does the author think he has obtained reliable bony solidification at the point of the disease.

All the cases of scoliosis were materially straightened and made taller, but all have lost part of the gain since the operation. It appears doubtful if a permanent straightening is maintained unless a reliable fixation-dressing is worn for a long time. Despite his failure above recorded, Ridlon is convinced that straightening of rachitic curvatures can be effected in younger patients.

THE TREATMENT OF SWEATING FEET.

GERDECK (*Centralblatt für die Gesammte Therapie*, October, 1898, recommends for the cure of this affection painting the soles of the feet with formalin. In the afternoon, the evening, and on the following morning the soles and heels are treated, the brush being carried over these surfaces four times; twice over the plantar surface of the toes. About twenty drops of formalin is used for each application. Four to six drops of the antiseptic is poured into each shoe.

Almost immediately the offensive odor disappears.

If a thirty-per-cent solution of formalin is used, six or seven coats should be applied at each treatment.

The effect of these paintings lasts three or four weeks, when they must be repeated. The application is slightly painful, but not in the least crippling.

INSTILLATIONS OF PROTARGOL IN CHRONIC URETHRITIS.

DESNOS (*Annales des Maladies des Organes Génito-urinaries*, No. 7, 1898; *Monatshefte für Praktische Dermatologie*, Bd. xxvii, No. 8) treats chronic diarrhea by instilling daily, or if the reaction from this is too great, every second day, twenty to sixty drops of a five-

to ten-per-cent solution of protargol into both the posterior and anterior urethras. Thirty-seven out of forty-six cases thus treated were definitely cured.

Tuberculous disease was not influenced by this treatment.

Four cases of blenorrhagic cystitis were cured by from five to seven instillations of a five per-cent solution. When the bladder is inflamed, however, it must be entirely free of urine before the protargol is instilled.

CLINICAL INVESTIGATIONS CONCERNING MUSCULAR RHEUMATISM.

ERBEN (*Centralblatt für Chirurgie*, Sept. 10, 1898) contributes a paper of great importance to surgeons as showing the danger incident to the too common diagnosis of obscure pain as muscular rheumatism.

In twelve cases of alleged rheumatic wryneck he discovered that not one was really due to rheumatism. The abnormal position was not caused by pathological contraction of the sternocleidomastoid, but was primary and was assumed to lessen pain; the muscle contracture was secondary and due to position. The pain and tenderness were in all cases on the convex side and not closely related to the muscles. Tenderness was especially elicited over the fourth upper spinous processes. In three instances the great occipital nerve was tender on pressure. In one case the smaller posterior superior nerve was tender over the mastoid process. In every instance the lateral flexion of the rigidly held head could be increased without pain. Sometimes rotation towards both sides was possible, often turning towards the convex side was difficult. None of the muscles of the concave side showed increased tonus. Pain was not caused by visible extension of the neck, hence spasm was not the cause of the torticollis. It was evident that the joints on the convex side of the cervical spine were diseased, or that the roots of the nerves passing out at this side were affected. This diagnosis was not nullified by the possibility of rotation, since this motion takes place almost between the atlas and axis.

Two hundred cases of lumbago were observed. In not one was muscular disease noted. In 119 cases there was affection of the articulations of the lumbar vertebræ characterized by tenderness to pressure over the joints, limitation of lateral flexion and lateral curvature, the concavity of this curvature being toward the sound side. Twenty-one cases were instances of neuralgia of the cutaneous nerves which have their origin in the three lower lumbar branches. The region of the vertebral articulations was not tender. In some cases the diagnosis could not be formulated. Some were alcoholics, some were beginning tabetics, and one was suffering from osteomalacia.

This study is extremely important, since it shows how often the surgeon is led to an erroneous treatment by the very common diagnosis of all obscure back pain as rheumatic; though a more accurate knowledge as to the true cause of this pain may not lead to the finding of any specific remedies for it, it will at least prevent the needless saturation of the systems of patients with antirheumatic medications.

OPERATION ON UTERINE CANCER.

GALVORN (*Centralblatt für Gynäkologie*, No. 35, 1898) operated on thirty-nine cases of uterine cancer with a hot iron. In nearly all of these the disease had extended widely; seven died shortly after operation; three in the course of six months without local recurrence. Of the twenty-seven cases reported as cured, seven were well for more than two years after operation, seven more than one year, four for more than seven months, and ten for less than six months.

PYEMIC SINUS THROMBOSIS.

WHITNEY (*Archives of Otology*, February, 1898) writes an interesting *résumé*, based upon three successful operative cases. Chronic suppuration of the ear is responsible for the greatest number of intracranial inflammations. Authorities have found that micrococci and bacilli were always associated in fetid secretions, while in the non-fetid only micrococci were present. Poliver determined "by culture and inoculation that the bacilli present in foul discharges were not pathogenic, but possessed saprophytic properties only, while inoculation with the micrococci produces speedily fatal sepsis." Gruber states that this conclusion demonstrates that the offensiveness of a discharge from the ear is no criterion of the danger to be apprehended from it. The healthy mucoperiosteum offers a strong resistance against the invasion of bacterial products, and consequently absorption is very slow, the microorganisms being destroyed by the phagocytic properties of the leucocytes. When the disease becomes

chronic the tissue defense becomes greatly weakened.

The author recognizes two varieties of sinus thrombosis, viz., primary or marasmic, and secondary or infective. The last named is the usual form following middle-ear suppuration. The "path of infection" in septic brain diseases is most commonly from direct extension from diseased bone lying in contact with the skull contents.

In a thrombosed sinus "disintegration of the clot may be sufficiently extensive to cause a partial restoration of the lumen of the vessel, and the current be reestablished either through the center of the thrombosis, or between it and the nasal wall, in which manner portions of the septic material are swept into the circulation and deposited elsewhere, giving rise to metastatic abscesses characteristic of pyemia." Furthermore, general infection may result from lymphatic absorption of the pyogenic organisms which penetrate the walls of the diseased veins and sinus and infiltrate the adjacent tissues.

"An attack of sinus phlebitis is usually ushered in by pain over the affected side of the head, malaise, nausea, preceded or followed by a sudden chill and a sudden and pronounced rise in temperature, 106° F. being frequently observed."

Rigors are a characteristic symptom. Vertigo is more constant when associated with meningitis; it is not a distinguishing symptom. Consciousness is a very varying symptom. In the early septic stage, Griesinger's symptom, edema of the region of the occipital vein, with marked tenderness on pressure in the upper portion of the post-cervical triangle, is a valuable guide. Edema of the eyelids of the affected side at times assists in arriving at a prompt diagnosis.

Zanfal (1880) first suggested the feasibility of opening and cleansing the sinus from purulent thrombi, and of ligating the internal jugular as a prophylactic measure.

As to the time to operate, Körner says: "As soon as you have made the diagnosis of sinus thrombosis, the moment to operate has arrived." The author believes that the tendency of infective thrombosis is always toward disintegration and the establishment of metastatic embolic processes. He further recommends that operators should always ligate the internal jugular vein when the sinus contains purulent material or a disintegrated clot. If the clot extends into the jugular vein, the vessel should be tied at the lowermost portion of the obstructed vein and as high up as possible, and then resected. In this method we avoid the probable infection from decomposition of the clot.

In cases where we cannot reestablish the circulation from below the jugular bulb, whether the disintegrated clot has been removed or not, the author states that it is an imperative duty to ligate the jugular vein. It is very gratifying to observe that he also enters a vigorous protest against the danger of manipulating a diseased vein in the neck in the hope of dislodging the clot. This procedure is more apt to favor the further spread of the infectious material.

At the present time the prevailing opinion of operators is to tie the jugular in all cases where toxic symptoms are pronounced, or where metastases are already present. The jugular vein should be tied before the sinus is opened. Voss recommends that the sinus should first be uncovered and the diagnosis verified, after which the jugular can be ligated.

The author summarizes as follows:

First.—The indications for jugular ligation in thrombosis of the sigmoid sinus, before exposing the sinus, are:

(*a*) The existence of chronic otorrhea.

(*b*) Pronounced manifestations of pyosepticemia, high fever, sudden remissions, and repeated rigors.

(*c*) Metastases.

(*d*) Griesinger's symptom, occipital edema.

(*e*) Edema of eyelids of corresponding side.

(*f*) Tenderness along the course of the jugular in the neck, and perhaps the cord-like feeling of the infected vein.

(*g*) Beginning neuro-retinitis.

Second.—The indications for ligation after exposing the sinus and recognizing the thrombosis, but before opening it:

(*a*) The presence of a clot extending well down into the bulb and disintegrated in its lower portion (as indicated by aspirator), associated with distinct pyemic symptoms, although metastases are absent.

(*b*) The display by the sinus of respiratory movements would render probable the admission of aerial embolism to the heart unless the vein were first tied; such movement in the sinus wall indicates the presence of a clot somewhat back toward the torcular from the point where the aspiration takes place, and has been noted by Jansen, Schwartz, and Körner, while sudden and fatal asphyxia from aerial embolism of sinus has been reported by Kuhn.

Third.—Indications for ligation after exposing and opening of the sinus:

(*a*) The presence of a large thrombus, extending down into the bulb, and having undergone purulent liquefaction in the deep bulbous portion, which may not have been diagnosed until the sinus was extensively opened; the curetting deeply into the neck under such conditions is fraught with imminent risk to the patient unless the vein is tied.

(*b*) Inability to reestablish the circulation from below, whether the clot has or has not been disintegrated, and whether or not there has been tenderness in the neck.

(*c*) Inability to reestablish the circulation from either direction has aroused some discussion as to the advisability of ligating both jugulars, but the author does not find that any serious consideration has been devoted to this question.

Whitney believes that it is a dangerous practice to place the nozzle of the syringe in the divided end of the jugular, near the bulb, and wash out the contents forcibly upwards and out of the opening in the sinus wall; for if the visceral layer of the wall is softened the injected fluid may rupture it and pass into the subdural or subarachnoid space, thus distributing infective material.—*The Laryngoscope*, September, 1898.

THE TREATMENT OF FRACTURED BONES BY OPERATION.

BARKER (*The Lancet*, Aug. 20, 1898) states that the question as to the propriety of treating fractures by surgical operations by wiring is one which at the present time is engaging a good deal of attention. As yet the majority of surgeons appear to be agreed that for most ordinary fractures other and simple mechanical modes of treatment are quite adequate and involve less risk, and with this view the author entirely agrees. There are, however, a considerable number of fractures which proverbially give but indifferent results if treated by mechanical appliances, and to these surgeons are beginning to apply operative treatment in ever-increasing numbers. To this class belong fractures of the patella and of the olecranon, whether recent or old, and fractures of the long bones of the leg or arm in which union is long delayed or totally absent. Hitherto the great bugbear in the operative treatment of such fractures has been the risk to limb or life involved in the operation. The nature of these risks we all know, and in the past they have very properly checked and limited operative undertakings. But how far this ought to be the case now with our greatly improved technique is a matter which appears to him to be open to discussion. With a view to clear his own impressions upon this subject he has for some time past been collecting those cases in which he has operated for fractured bones and studying the results in order to see whether the series appears to justify such interference or not. As these results will probably interest others who are speculating on the same subject, the author has decided to publish them. The cases have all been operated on for injury of bones recent and old. If they have any value it lies in the fact that they form an unbroken series and have been operated on by the same surgeon, with almost identical precautions in each case against surgical accident. There are forty-six cases in all, including some in which bones have been divided for various reasons and subsequently sutured, such as, for instance, where the patella or olecranon has been sawn across to explore a joint or reduce a dislocation, but not including excisions. Of the latter it may be said that though their fate would materially and favorably influence the question of the unjustifiability of interfering extensively with bones, they belong to a somewhat different category. Of all his excisions of the knee the author has lost none, and only two have subsequently required amputation—the case of an old woman whose knee he tried to save and a young woman who came to him for amputation but whose leg he tried to save first by excision. The forty-six cases alluded to arrange themselves thus: subcutaneous suture of patella for fracture, 19; suture of patella (open method), 10; suture of olecranon for fracture, 6; suture of olecranon for dislocation, 2; suture of bones of forearm (ununited fracture), 2; suture of bones of leg (ununited fracture), 4; suture of clavicle (ununited fracture), 1; suture of patella after division, 2; total, 46.

Of the first group it need only be said that all have recovered well from the operation without any accident. The writer has made every effort to follow these cases up to date, and results have been excellent. In some few a little limitation of movement has remained, but the limb has been firm, and as far as could be made out the union of the fragments was osseous. In none so far has the wire appeared to give any trouble. Of

several he possesses skiagrams. These show that though the union is bony the adjustment of the fragments to one another was not always symmetrical. This has not appeared to unfavorably influence the movements of the joints, as we know, indeed, little irregularities in the patella in rheumatoid arthritis do not always do. Several of the patients were absolutely restored to as good use of the injured limb as though it had not been damaged at any time. Those cases in which stiffness was noticed to any extent were past middle life, and it was seen even in cases which had healed without reaction. On the whole, he is very well satisfied with his subcutaneous method of suture for recent cases at any age. For fractures which have remained ununited for months of course the open method will be required, but such cases will become rarer and rarer as the simplicity and freedom from risk of the subcutaneous method is more fully recognized.

Of old fractures of the patella there are ten cases, and of these eight healed by first intention without any suppuration. Cases 2 and 7 suppurated, but not very seriously. The first was one of the writer's earlier cases treated long ago, and the suppuration was in the periarticular structures. He saw the patient years later with an excellent movable knee, and removed the knot of wire, which was giving him some trouble. Case 7 was one of comminuted fracture of the patella, almost compound, with loose fragments which had to be removed. Those which remained were surrounded with a "purse-string" suture and thus drawn together. Some swelling followed and effusion into the tissues above the knee, but though he made incisions only serum escaped. The main cavity of the joint appeared to be quiet all the time, though the suture wound opened and the wire had to be removed in part. Barker put this case down as suppuration, as there certainly appeared to be some, and the wound yielded pus, though not to a large extent. He has lately seen the patient, who is well satisfied with the result. There is much stiffness in the knee, though he thinks this will pass off to a great extent in time.

One of the last cases operated on was particularly interesting; it was one of transverse fracture by very slight muscular action. But the joint was enormously swollen and looked as if about to suppurate. The author opened the joint by a curved incision with the convexity upwards and found a great deal of broken-down blood-clot, almost purulent. This was removed and the bone fragments brought together with one silver wire. The wound healed absolutely by first intention and the patient left the hospital. Before he went he was discovered to have ataxic symptoms. Two months later he was admitted to the medical wards as a case of Charcot's knee, the joint having become greatly distended. As there appeared to be pus in it, it was opened by a colleague during the writer's absence and much broken-down purulent material was evacuated. It was then found that the wire had worked through the lower fragment and was loose. It was removed and the joint was drained. The man soon left the hospital healed, but with all the signs of ataxia, and has not since been seen. Had the condition which probably favored the fracture been recognized at the outset he should not have been operated upon. But the man was young and the symptoms were not well marked.

In all the eight cases where there was no trace of inflammation after the operation the results were admirable, and in the other two the state of the patients or their joints did not appear to be critical at any time.

Six recent fractures of the olecranon were wired, and with the exception of one, which was compound and comminuted, the results as to movement were admirable. All healed *per primam*, even the compound case, but here there remained great stiffness. The woman was fifty-three years of age, and when the adhesions were broken down under an anesthetic about a month after discharge from hospital the line of union in the fragments gave way in spite of the "purse-string" silk suture. In the other cases the results were almost or absolutely perfect.

Recently Barker saw a blacksmith's hammerman whose broken olecranon he wired two and a half years ago, with as strong and movable an arm as if it had never been broken. The method employed for some years has been to make an oval flap, drill the fragments transversely, and use wire, making the knob on the outside. In only one case so far has the wire given trouble. It irritated the skin and had to be removed. In two cases he divided the olecranon as a preliminary to reducing old dislocations of the elbow. In one, a boy aged twelve years, though firm union resulted, there was considerable stiffness of the joint when he left the hospital. He has not been seen since. In another, a woman aged fifty-six, whose dislocation dated from four months back,

he divided the olecranon, reduced the dislocation, and primary union resulted. When last heard of the result bade fair to be perfect. In two cases the radius was cut down upon and wired for old ununited fracture. The first he has not seen since the operation; the last, a middle-aged woman, recovered with primary union and with good use of her arm. The clavicle united perfectly under one dressing and all the symptoms were relieved.

In two cases the author divided the patella for access to the joint and wired at once. The union was primary in both without reaction and the patients left, much relieved in one case; the other was a private case and was quite relieved.

Of the four cases in which the bones of the leg were wired for ununited fracture primary union took place in all, and the functional result was perfect in three. But in the first union had not taken place in the bones when last seen and the patient cannot be traced.

The writer states that he thinks the results encouraging, especially as they were achieved in an old hospital now happily being rapidly rebuilt. With care and experience the results ought to be better in the future.

THE CONSERVATIVE AGENCY OF SHOCK.

Dr. H. G. WETHERILL (*Journal of the American Medical Association*, March 12, 1898) in an article on this subject deduces the following conclusions: (1) Surgical shock entirely unassociated with hemorrhage is a condition rarely seen, and one which may usually be successfully treated in persons who are otherwise in good health. (2) Hemorrhage, though small in amount, is a far more important factor in the production of surgical shock (as it is seen clinically) than we have been accustomed to think it. (3) This mixed shock (traumatic asthenia) should be designated by some distinctive title, or the term shock be construed to comprehend all the factors in its genesis. (4) While not proven, it seems probable that the effect of even a small continuous arterial hemorrhage is to produce through its reflex action lower blood-pressure, and in general a condition so like true shock as to be very difficult of differentiation, particularly if the hemorrhage is concealed, as in ruptured ectopic pregnancy. (5) Surgical shock, with or without hemorrhage, must be construed as primarily conservative in its tendencies. The incident prevention of rapid exhaustion, of acute suffering, or great blood loss when the blood-vessels are opened, all tend to the ultimate saving of life. (6) Premature stimulation in the treatment of traumatic asthenia may defeat this conservative effort of Nature. Bleeding should be stopped and proper provision made for the comfort and welfare of the patient before strong stimulation is resorted to, unless there is imminent danger of death. (7) Anesthetics must be sparingly and carefully given to patients suffering from surgical shock (traumatic asthenia), chiefly because they completely obliterate the reflexes. The saturation of the patient with an anesthetic may turn the scale against him, even though the direct effect of the anesthetic be stimulant. The same rule holds good in regard to the employment of alcoholic stimulants if too freely used. (8) We should cooperate with and supplement Nature's conservative efforts. They are always exercised in behalf of the patient, never against him.

TWO CASES OF RECOVERY FROM TRAUMATIC TETANUS AFTER THE USE OF ANTITOXIN.

G. G. DAVIS (*Annals of Surgery*, August, 1898) reports two cases of traumatic tetanus successfully treated by tetanus antitoxin. The author had formed the opinion that the value of antitoxin in the treatment of tetanus was not proven, encouraged thereto by a contribution of Dennis. Davis pushed its administration, both as to the amount and length of time, to the extent of his resources. His first case developed stiffness of the muscles of the back one week after the wound, and four days later this had involved the neck and jaws. He reported for treatment one week from the first appearance of his symptoms. At that time the pulse was below 100, respiration 36, and there was stiffness of the muscles of the back, most marked in the lumbar region. In the following twenty-four hours there was no marked progression of symptoms. The antitoxin was then administered. The case in all received forty-two doses of eight to ten cubic centimeters in eighteen days.

The second case developed tetanus two weeks after the wound and was given twenty-eight doses of the antitoxin (Roux) in twelve days. Sedative drugs were used in addition to the antitoxin.

The first case was comparatively mild; the second case when he came to the hospital

was having three to eight spasms per hour, and had been suffering from symptoms for a week prior to presenting himself. Both these cases recovered, and the reporter has the impression that the antitoxin did help them. It is worthy of note that over a hundred dollars' worth of the antitoxin was used.

UREMIA IN THE PROCESS OF CHILD-BEARING.

In the *American Journal of Obstetrics* for August, 1898, LEWIS writes on this subject. He says that prophylaxis is of the utmost importance in the treatment of the uremia of pregnancy, since by proper dietary very many cases of severe intoxication may be nipped in the bud. The occurrence of albuminuria or other symptom of faulty elimination, such as low specific gravity, small daily amount of urine, headache, nausea, etc., should be the signal to put the patient at once on a milk diet, exclusively milk for a while, until the cessation of the alarming symptoms indicates more latitude in the *menu*. The diet throughout the rest of the pregnancy should contain little of the red meats or other food likely to cause an excess of the nitrogenous contents of the blood. The pregnant woman with albuminuria should not travel, for fear of the excitation of the genital organs produced by the jarring of the train. Iron and other tonics should be used for the anemia which is often present. Mild diuretics and drinking of much water should be advised. Warm baths or Turkish baths are useful and not at all dangerous unless in excess. Laxatives, preferably the milder salines, should be given as often as needed to keep the bowels free.

Should the prophylaxis fail there comes up the question of interference with the pregnancy. If, in spite of proper effort and of proper cooperation on the part of the patient, the symptoms should continue to become more grave, especially should the daily amount of urine continue to diminish and the total urea to remain low, he thinks the weight of present authoritative opinion would advise induction of labor. As in the incoercible vomiting of pregnancy, each case must be duly considered by itself as to when the time for interference has come. Of course the method employed to induce labor will depend upon the time of the pregnancy. As the very first labor pains are likely to excite convulsions, it is imperative to be as quick as possible. Manual dilatation, Barnes' bags, instrumental dilatation, Tarnier's ecarteur, or the deep cervical incisions of Dührssen, will be used according to the circumstances of the individual case. Charpentier and the French as a rule advise waiting for the natural supervention of labor and ending it naturally if possible. They entirely discard forced labor and Cæsarian section in eclampsia, preferring the use of chloral to the point of narcosis. Dührssen and many of the Germans advise immediate and even forcible delivery in eclampsia or when that is imminent, always under deep chloroform anesthesia. Between these comes the great body of the profession, which adopts a middle course within these wide limits.

The fact that, in eclampsia continuing after the labor, there seems to be a decided benefit observable from free hemorrhage points to the rationality of blood-letting at any time when spasms occur. This procedure seems more beneficial in those acute cases accompanied by much edema, large amount of albumen, sudden onset of the uremic symptoms, full, bounding pulse, and cyanosis. Bleeding seems rational in such an array of conditions if ever, whatever the cause of the convulsions may be, whether uremia, heat-stroke, epilepsy, or what not. Without doubt it has almost always, under such circumstances, been immediately beneficial in puerperal uremia, but there is question whether it does not do more ultimate harm than good. The relief may be immediate; but as the volume of blood returns to normal by the imbibition of water from the alimentary canal and the tissues, or from hypodermoclysis, the tension returns, and we are then confronted by the former conditions with the addition of an acute anemia. According to Leyden's idea, the very lesion in the kidney is anemic. Therefore, while it may be justifiable in the plethoric to do phlebotomy in order to gain time for the action of eliminative drugs and for obstetric interference, yet the procedure is dangerous and should not be carried to any great length. Venesection was the treatment in Guy's Hospital before 1868, and the mortality in puerperal eclampsia was thirty per cent. Since then it is 20½ per cent under the treatment by chloroform.

Since the overwhelming weight of opinion is that the eclampsia is caused by faulty elimination, and since the vast majority of authorities recommend measures directed to favoring elimination by the skin, bowels, and kidneys in the early stages of the intoxication, it would seem to follow that radical

means ought to be employed in that direction when the graver attacks come on. Such is the justification for the use of pilocarpine, hot air, elaterium, and the drastic hydragogues. One should remember in employing these measures that they all tend to weaken the heart, and that upon the maintenance of the cardiac strength depends our hope of recovery. They should be used only with caution and in cases where the pulse is of good quality, unless they be used as forlorn hopes after other measures have failed.

Veratrum viride has been used, especially in this country, since its introduction by Fearn, of Brooklyn, in 1869, in cases of uremic attacks of all kinds, and it has vigorous partisans in the convulsions of childbearing. Jewett refers to twenty-two cases, in only one of which did convulsions recur after treatment had been established. He advises its use subcutaneously in doses of ten to twenty minims until the pulse-rate has been brought under 60, when, in his experience, spasms will not occur. Similar good results have not been obtained in England from veratrum. In American literature there are very many favorable reports of cases, but nobody has, as far as the author knows, published a series of cases, covering any length of time, giving both sides of the statistics of the use of veratrum. Many who recommend veratrum advise and use also rapid evacuation of the uterus under chloroform anesthesia. In an affection where so much depends upon maintaining the force and regularity of the heart, it seems very heroic and dangerous treatment to employ to its toxic action so powerful a cardiac depressant as veratrum, with the aim of controlling the spasms, which are themselves only a symptom of serious poisoning of the blood and of a vicious nerve state kept up by the presence of the contents of the gravid uterus. It would require very encouraging statistics indeed to induce the writer to trust alone to any method which avowedly only controls the visible explosions of the disease, to the exclusion of measures calculated to eliminate the poison, if possible, and to terminate as soon as safely can be the condition of pregnancy, which is at the bottom of the whole trouble.

In 1887 Gustav Veit strongly recommended morphine in large doses for puerperal eclampsia. He begins with a dose of half a grain, and follows it soon with a smaller dose, unless the narcosis is complete. He gives another dose as soon as consciousness begins to reappear, and keeps the patient in that condition for hours, or even days, until the child is born and the tendency to spasm ceases. No other treatment is recommended. Olshausen favors the morphine treatment, but would permit forceps or version in the interest of the child, if these operations could be easily performed. The action of the narcosis paralyzes the voluntary muscles and thus stops the attacks, which in themselves tend to increase the arterial pressure and consequently the morbid condition in the kidneys and in the brain. The prognosis for both mother and child is said by the advocates of this treatment to be better than by any other method. Löhlein claimed that it had reduced the maternal mortality to fourteen per cent, and that the infant mortality had been reduced to forty-one per cent. Dührssen criticizes Löhlein's statistics, both as to their accuracy and on the ground that they embrace too few cases to be of value. In the latter's collection of 325 cases of eclampsia from all German clinics were eighty-six cases where the morphine treatment had been used, not, however, by any means to the exclusion of other measures. In these eighty-six cases, twelve or fourteen per cent died, excluding complicated cases. The general mortality of the whole 325 was nineteen per cent. Some difference of opinion will always exist as to what cases, in a series given to prove percentages, ought to be excluded on account of complications.

The advocates of prompt obstetric interference in cases of the graver uremic manifestations in pregnancy base their claims upon various considerations. In the first place it is known that in the vast majority of cases the spasms cease or grow less severe as soon as the child is born, therefore the sooner that is brought about the better for the patient. The chief reason for not inducing labor is that the manipulations to that end will of themselves precipitate convulsions. This is not the case if the patient is under complete narcosis. Therefore, if narcosis be complete and the operation be done quickly, the patient is soon brought out of the condition of intoxication and of spasm and stands a better chance of recovery than if allowed to remain therein while the convulsive phenomena are palliated by cardiac depressants or by prolonged dosing with large amounts of morphine. The great trouble, especially in young primiparæ, who are the most subject to these attacks, is that it is very difficult to artificially empty the uterus with despatch. The earlier the eclamptic

seizures begin the harder to induce the labor. The accouchement force is apt to be dangerous of itself. Dührssen devised an operation to overcome this difficulty. In the primipara, after the head has become engaged in the pelvis toward the last few weeks of pregnancy, the body of the cervix becomes effaced, and though the os may be as tight as a pin-hole, yet the cervix is stretched over the protruding head in a thin layer. The main time in inducing labor is taken up by the dilatation of the os. Dührssen makes incisions laterally, and, if necessary, anteriorly and posteriorly, completely to the vaginal attachment through the cervical tissue, thus entirely and at once obliterating the period of dilatation of the os. Then he turns or applies high forceps and delivers at once, perhaps doing episiotomy if there is difficulty in passing the head over the perineum. He claims that the incisions thus made usually heal without incident or can be repaired like ordinary lacerations. The patient is thus at once brought into the puerperium, and, if the eclampsia continues, the other means mentioned may be used against it with the very favorable circumstance that now the pressure of the distended uterus is eliminated from the causation. In a symposium at the Boston Obstetrical Society these conclusions were reached: that nothing is gained by delay in puerperal eclampsia, that the continuous administration of anesthetics has not been known to allow of the reappearance of the convulsions, and that slow manual dilatation and emptying of the uterus has been repeatedly successful. Dührssen's method now makes this slow manual dilatation unnecessary. In multiparæ the internal os is usually not open, nor is the cervix flattened out over the head, so that in such cases manual or instrumental dilatation must be employed instead of the deep cervical incisions. Where immediate delivery in eclampsia is imperative, even Cæsarian section has been strongly recommended. Puech considers that in a pregnant woman, if the albuminuria persists in spite of milk diet, and especially if it be accompanied by gastro-intestinal symptoms and dyspnea, the maternal interests demand the induction of labor. Indeed, modern opinion seems to be tending toward ending the pregnancy as soon as it is evident that the uremic symptoms are not being controlled by the dietetic and diuretic treatment, and not to wait until the graver accidents, such as coma or eclampsia, come upon us unawares.

Reviews.

TEXT-BOOK OF HISTOLOGY, INCLUDING MICROSCOPIC TECHNIQUE. By Dr. Philipp Stöhr. Second American from the Eighth German Edition. Translated by Dr. E. Billstein, and Edited with Additions by Dr. Alfred Schafer. Freely Illustrated. Price, $3.00.
Philadelphia: P. Blakiston, Son & Company, 1898.

The author of this book, Dr. Stöhr, is professor of anatomy in the University of Würzburg, the translator is the director of histology in the Woman's Medical College of Pennsylvania, and the editor is demonstrator of this branch in the Harvard Medical School at Boston. To some of our readers the first American edition of this volume is probably already familiar. To the present volume the editor has added a number of illustrations taken from original drawings; new editorial remarks and criticisms of the text have also been introduced.

Of the numerous books on histology which have recently appeared this strikes us as being one of the best, not only because of its contents, but because of the beautiful way in which it is printed, with large type on heavy paper, the wide pages making a book which lies readily open on the desk before the student and is easily perused. As a matter of fact, if we were called upon to choose between this book and that of Dr. Dunham, which we reviewed in our last issue, we would find it difficult to make a decision. It is interesting to note in this connection that this volume is recommended by the professor of pathology and histology in the Jefferson Medical College to the students of that institution in the teaching of histology.

A TEXT-BOOK OF OBSTETRICS. By Barton Cooke Hirst, M.D. Copiously Illustrated. Price, $6.00.
Philadelphia: W. B. Saunders, 1898.

It is very proper that the professor of obstetrics in such an important school as the University of Pennsylvania should come before the profession and students as the author of a complete and accurate text-book of obstetrics; and a close examination of the pages of this volume reveals two facts, namely, that they bear almost invariably the personal opinions of the author neatly associated with the opinions of others. This is evidenced not only by the text, which shows a wide knowledge of obstetrical literature, but by the copious foot notes which can be turned to by those who desire to look into the matter under discussion more fully. This volume, although it covers over 800 pages, may be considered a most concise work, and

while it is too bulky to be readily used as a handbook, it is of such size that it contains all necessary obstetric knowledge without becoming so unwieldy as to be burdensome. In many of the foot-notes the author expresses views which he does not think it wise to express in the body of the text. The illustrations are many of them original, and the original ones are as a rule the most valuable. We are interested to note that Dr. Hirst condemns, as we believe all good obstetricians and therapeutists condemn, the use of pilocarpine in eclampsia. His treatment consists in the use of hot packs, hypodermoclysis, or intravenous injection, and the administration of full doses of the extract of veratrum viride. In the treatment of postpartum hemorrhage it is advised that the fluid extract of ergot be given hypodermically into the thigh, but we do not believe that this preparation is suitable for this purpose, first, because it is not absolutely reliable so far as its effect upon bleeding is concerned, and secondly, it is apt to clog the syringe and produce an abscess. The "aseptic ergot" is much to be preferred for these reasons and purposes. The only part of the book which seems to us to need revision is the index, for which the author is not directly responsible, for in it typographical errors are not rare and cross-references are lacking. Nevertheless, the index is adequate and only needs slight correction to be as good as the text.

While there are already a number of recent and very excellent books on obstetrics which can be used by students, this one seems to us to give promise of being exceedingly popular with the class of persons for whom it was written, and Dr. Hirst has produced a volume of which he himself, his friends and his pupils will be proud, and one which the profession in general will find most valuable as a practical guide.

HUMAN ANATOMY. A Complete Systematic Treatise by Various Authors, Including Surgical and Topographical Anatomy. Edited by Henry Morris, A.M., M.D., London. Profusely Illustrated in Colors. Second Edition, Revised and Enlarged. Price, $6.00.
Philadelphia: P. Blakiston, Son & Company, 1898.

A little over five years has elapsed since the first edition of this very notable book upon anatomy appeared, and during this time it has become an exceedingly popular work with teachers of anatomy and with students. The present volume resembles its predecessor in its typographical appearance, the pages are wide, the type is large, and the illustrations are exceedingly good. In the revision the editor has retained the services of those gentlemen who were engaged with him in the preparation of the first edition, with the exception of two, Dr. Arthur Robinson taking the places of Dr. Brooks and of Mr. Hensman. An additional section on Vestigial and Abnormal Structures by Dr. Robinson has been added to the volume, as has also a description of the skin by Mr. Anderson.

Naturally in such a subject as anatomy in its more elementary parts, as represented in this book, there has not been room for great revision. The present volume will be in the future, as it has been in the past, an active rival of that most popular work known to almost all English-speaking physicians by the name of "Gray's Anatomy."

MATERIA MEDICA, PHARMACY, PHARMACOLOGY, AND THERAPEUTICS. By W. Hale White, M.D., F.R.C.P. Fourth American from the Second English Edition. Edited by Reynold W. Wilcox, A.M., M.D.
Philadelphia: P. Blakiston, Son & Company, 1898.

This is a small octavo volume of about 700 pages, including the index. Why the fourth American edition should be published upon the basis of the second English edition when the third English edition appeared this fall and is in accord with the new English Pharmacopœia we do not know, and for this reason that part of the text which has been written by Dr. White does not represent his latest views upon therapeutics.

Dr. W. Hale White is well known to the profession in general by reason of his very able and interesting investigations which have been made at various times concerning fever and a number of other clinical conditions which have an important bearing upon the practice of medicine. Dr. White is also the lecturer on therapeutics at Guy's Hospital, London, and some of our readers are probably aware that his book on General Therapeutics, which deals with remedial measures other than drugs, is an ably written and interesting volume.

The present edition, from the point of view of the English text, represents a concise statement of modern therapeutics, and the American editor has added a very large amount of matter with the idea of making it represent the views of American physicians as well. These additions upon the part of Dr. Wilcox are useful and reflect the opinions of his American brethren. Sometimes they are absolutely antagonistic to the views of the author. Thus, Dr. White evidently does

not believe that phosphorus is of any value in rickets, whereas Dr. Wilcox expresses a diametrically opposite opinion. The book from its size lies between a compend and a more exhaustive book upon therapeutics, and deals with therapeutics in a manner which makes it better adapted for first and second year students than for those who are further advanced in their medical course. The fact that this is the fourth American edition proves that its value is appreciated, and we doubt not that it will continue to be used by the class of pupils that we have named with advantage and a gain in knowledge.

A COMPEND OF OBSTETRICS. By Henry G. Landis, A.M., M.D. Revised and Edited by William H. Wells, A.M., M.D. Illustrated.
Philadelphia: P. Blakiston, Son & Company, 1898.

This little compend has within a few years reached its sixth edition. Owing to the death of its well known author some years ago it became necessary for the publishers to obtain the aid of a physician who was capable of keeping it up to the most recent advances in obstetrics, and Dr. Wells has succeeded in the task which has been set him. Like most of the books in this series, it is published in the question and answer form and will doubtless remain in the future as in the past a popular compend for those who wish to "cram" this branch before going up for examination. We doubt whether the statement made on page 33 in regard to ovulation has been proved correct, namely, that frequent coitus results in frequent ovulation.

THE COLD-BATH TREATMENT OF TYPHOID FEVER. By F. E. Hare, M.D. Illustrated.
London: Macmillan & Company, 1898.

This is a book of less than 200 pages devoted to the Brand method of treating typhoid fever and written by one who has perhaps had a larger experience with this method than almost any other living physician. It is based, we are told, upon an experience of a consecutive series of 1902 cases treated at the Brisbane Hospital, and is copiously illustrated, in order to show the methods which the author has employed in the technique of the bath, and as to the means by which the patients are to be transferred from the bed to the bath and from the bath to the bed. Dr. Hare's method is one which is designed to conserve to the utmost the strength of the patient and to prevent him from using any effort on his own part during the bath. It is also designed to make the patient as comfortable as possible during the bath, a factor of great importance, for oftentimes the posture of the patient in the water is exceedingly uncomfortable, and it requires considerable muscular effort to prevent his head from being submerged.

We notice in reading this essay that, like many other clinicians who think for themselves, Dr. Hare has not blindly followed the arbitrary dictates of those who insist upon every detail of the bath being carried out in every case. It is evident that he recognizes the fact that individuals differ in the treatments which they require, and we believe that a part of his good results is due to the recognition of this fact. The bath treatment was, however, employed by him in all his patients after a certain date, with the exception of those who refused to submit to it, cases in which the temperature failed to attain the bathing point, which is 102.5°, and, most important, cases in which contraindications were present. It is needless to say that the comparisons made by Dr. Hare of the results of the cold-bath treatment, as compared to those of the so-called expectant method before he introduced the bath, are very favorable to hydrotherapy. Aside from the modifications of the treatment which we have mentioned and which make its use more agreeable to every one concerned, the author states that allowance must be made for the fact that as Brisbane is practically in a tropical climate patients naturally object less to the bath than those living in a colder zone. He also emphasizes the fact so greatly emphasized by Brand, that the bath must be used by the fifth day if the best results are to be obtained, and that it cannot be used late in the disease as a rule. This is an important point, overlooked by some and contradicted by others of less experience. Again, owing to the high temperature of the atmosphere in Brisbane baths were almost always given at a temperature of 75° or 80° instead of below this point, and therefore the shock to the patient was not as great as if colder water had been used. An important omission was made in that frictions were not made because the wards were "short-handed," but some of the disadvantage in this respect was more than counterbalanced by the fact that the patients were not exposed to very cold water.

Dr. Hare frankly points out that the treatment does not shorten the disease. Thus in 373 cases treated by the expectant method the fever lasted twenty-four days, and in 966 cases by the bath method it lasted 23.3 days.

So far as the stay in the hospital is concerned, which is, of course, a mirror to a certain extent of the time required for convalescence, we learn that the stay in the hospital in 431 expectant cases was 35.9 days, and in 1033 baths 31.6; in other words, but four days were saved in convalescence, and the fever was not shortened. Concerning relapses, 46 took place after normal temperature in 999 cases which were bathed, and 64 relapses took place if those cases are included in which the relapse came on when the temperature had not fallen to normal but was as low as 99°. The mortality of the relapse cases was 8.7 in the 46 cases named, or 12.6 in the 64 cases named. It is therefore evident that the bath increases the tendency to relapse, and that in the relapse mortality is greater than it is in primary attacks.

In regard to perforation and hemorrhage we find that before the bath was used there were 4.70 per cent of cases of death from this cause in 576 patients, and that after the bath was instituted there were 4.1 per cent of deaths from these causes in 1902 cases.

This monograph is an exceedingly valuable one to those who are interested in the discussion of this very vital question—and who is not? Dr. Hare has been unusually careful in the comparison of his statistics. Curiously enough, however, he has made one very important omission. Thus in studying the possibilities of error in his calculations he ignores the most important point in the whole field, namely, the differences in mortality which occur in the disease at the different periods at which it comes under treatment by the Brand method. Proper nursing, sanitary care, and slight medication, with the use of proper forms of hydrotherapy to control the fever, instituted as early as the fifth day in all cases of typhoid fever, would give a very low death-rate, whereas similar treatment or the bath treatment instituted later in the disease would permit a higher mortality. Further, if the bath were universally employed in late cases it would probably increase the mortality if the teachings of Baruch, H. A. Hare and others are correct, namely, that in the late stages of typhoid, when the body is too feeble to react, the baths are capable of doing harm.

In the treatment of typhoid perforation F. E. Hare believes in immediate operation as soon as enough morphine has been given to abate the violence of the pain, but first to wash out the stomach if vomiting has begun. When a perforation is found he thinks it ought to be enlarged longitudinally and the bowel drained, thoroughly closing the opening afterwards by a double row of Lembert sutures. The physician should examine the lower portion of the bowel to see that no secondary perforation is present, and if any spot seems about to perforate it should be treated as if it had perforated. After this the peritoneal cavity should be thoroughly flushed with warm water and a glass drainage tube inserted. He believes that the best incision is the slightly curved one recommended for operations in appendicitis. He thinks that the alteration in the rate and character of the pulse after perforation is sufficient to separate this condition from almost all forms of violent pain which come on in the abdomen during typhoid fever.

A Pocket Medical Dictionary of Twenty-one Thousand Words. By George M. Gould, A.M., M.D. New Edition, Rewritten and Enlarged. Price, $1.00.
Philadelphia: P. Blakiston, Son & Company, 1898.

Dr. Gould has come to be known by the medical profession as *facile princeps* a builder of good medical dictionaries, for both of his larger volumes have been universally recognized as exceedingly valuable contributions to lexicography. The present pocket manual is smaller than the average visiting list, and therefore can be readily carried in the pocket. It is needless to state that it is correct so far as it goes, but its very abbreviated form necessitates equally abbreviated definitions. We happen to notice that the definition of paracresol, while correct, does not convey to the student the idea that paracresol is used in medicine as an antiseptic and disinfectant. This is but an illustration of the necessity of abbreviation. Naturally, also, this small volume does not contain all the useful tables which characterize Dr. Gould's larger publications, but a number of them, as, for example, the table of the muscles and of the nerves, are introduced.

Practical Urinalysis and Urinary Diagnosis. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M.D., LL.D. Fourth Revised Edition. With Numerous Illustrations, Including Photoengravings and Colored Plates.
Philadelphia: The F. A. Davis Co., 1898.

Dr. Purdy's book upon urinalysis and urinary diagnosis is probably the most popular work that has ever been published on this subject, for three large editions of it have been exhausted in three years, and we are told in the preface that upward of sixty medical colleges have adopted it for a text-book. It is an octavo volume of 350

pages, well printed and well illustrated, and deals chiefly with the clinical side of the study of the urine. Because of the concise way in which the facts are stated, and because useless material has been excluded, it is exactly what it professes to be, a complete and yet condensed summary of the subject, and we congratulate the author upon having been able to present a book upon a well worn theme which has attained such an extraordinary success, a success which it is needless to say it well deserves.

DIET AND FOOD CONSIDERED IN RELATION TO STRENGTH AND POWER. By Alexander Haig, M.A., M.D., F.R.C.P. Illustrated.
London: J. & A. Churchill. Philadelphia: P. Blakiston, Son & Co. 1898.

We have received a copy of this little brochure of eighty-three pages from both the English and American publishers. Dr. Haig is well known for his interesting studies upon uric acid as a factor in disease, and while many of us are unable to agree with him that it is as much a factor as he would have us believe, he deserves an immense amount of credit for having called attention to a very important part of medical study. As may be gathered from the title of this book, it is a short essay designed to illustrate the necessity of regulating the quantity of the various foods which are taken in daily life, so that they will best supply the demand of the body under varying circumstances, and this subject of course cannot fail to be of interest to every one, whether he be a layman or a medical man. The book is well worth the half-hour's perusal which is required to grasp the points which Dr. Haig presents.

A MANUAL OF THE PRACTICE OF MEDICINE. By Frederick K. Taylor, M.D., F.R.C.P.
London: J. & A. Churchill. Philadelphia: P. Blakiston, Son & Co. 1898.

This small octavo volume, amounting to over a thousand pages, is familiar to many practitioners on both sides of the Atlantic, and has been fortunate enough to reach its fifth edition in the short space of eight years, proving that Dr. Taylor's experience as a teacher, physician, and examiner has qualified him to prepare for his professional colleagues the information which they find useful. The present edition has been reset in type and is somewhat larger than its predecessors. New chapters have been introduced concerning glandular fever, angioneurotic edema, and similar comparatively rare maladies. A separate section is devoted to Diseases of the Mediastinum. The author tells us that he has obtained much valuable information from the "Twentieth Century Practice of Medicine," from Allbutt's "System of Medicine," from Manson's "Tropical Diseases," and from Cole's "Treatise on the Blood."

While there is nothing distinctly original in the character of this book, it is a condensed and valuable summary of medicine. In some portions of the book the paragraphs devoted to treatment are not as complete as might be desired, and the author does not state his own opinions in a sufficiently dogmatic way. The book can be most cordially recommended to both students and practitioners as being a little less bulky than most of the volumes which are well known which deal with practice, and yet not so condensed as some of the small manuals which are forced to leave out important material.

A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE. For Use in Training Schools for Attendants and Nurses and in Medical Classes. By C. B. Burr, M.D. Second Edition, Thoroughly Revised. Price, $1.00.
Philadelphia: The F. A. Davis Co., 1898.

Dr. Burr has prepared this second edition of his small octavo volume upon insanity and psychology within a comparatively short time after the appearance of the first edition. It is really a "primer," as its name indicates, and does not attempt to deal with the deeper problems which would naturally be considered in a larger volume. Indeed, it is a book more suitable for nurses than for physicians. An interesting glossary of neurological terms opens the volume.

MANUAL OF THE DISEASES OF THE SKIN. By L. Duncan Bulkley, A.M., M.D. Fourth Edition, Revised and Enlarged.
New York and London: G. P. Putnam's Sons, 1898.

It is undoubtedly because this book is truly a manual and deals in such a thoroughly practical way with the diagnosis and treatment of skin diseases that it is already in its fourth edition.

The first few chapters are devoted to the general considerations of the study of dermatology, anatomy and physiology of the skin, symptomatology, etiology, and classification. This latter is particularly simple and easy to bear in mind.

In the sixth chapter there is an analysis of twenty thousand cases of diseases of the skin, showing the relative frequency of the various disorders. It is worthy of note that acne, eczema, psoriasis, and syphilis hold first rank.

There are at the end of the book 118 prescriptions representing those found most

useful in dermatology. There is, moreover, an accurate medical index.

This is certainly a book which is likely to be most useful to the general practitioner. The author has carefully avoided vagueness in either symptomatology or treatment, and has stated briefly and clearly the results of his own exceptionally large experience.

YELLOW FEVER IN THE WEST INDIES. By Izett Anderson, M.D.
London: H. K. Lewis, 1898.

This is a small octavo volume of about one hundred pages, dealing with the author's experience in the treatment of yellow fever during a period of thirty-four years in the West Indies. Having been forced to retire from practice, he has now gathered together his notes and case-books, and has written the pages of this volume from the information derived therefrom. His object in writing the volume has been to help younger practitioners who settle in the West Indies to practice, as he believes that a clear conception of the etiology, pathology and treatment of this disease will aid them very materially in their work.

A MANUAL OF VENEREAL DISEASES. By James R. Hayden, M.D. Illustrated.
New York and Philadelphia: Lea Brothers & Co., 1898.

The second edition of Hayden's book has been enlarged by a chapter upon the Care and Use of Urethral Instruments; also it has been more profusely illustrated. In other respects the text is much the same as that of former editions, excepting that it has closely followed new and excellent modern teachings and is perhaps more systematic in arrangement and more clear and direct in its diction than before. This is saying a great deal, since the work admirably covers the diagnosis and therapeutics of gonorrhea, chancroid, and syphilis. It is a thoroughly trustworthy guide, and as such is worthy of the warmest commendation.

BRIEF ESSAYS IN ORTHOPEDIC SURGERY. By Newton M. Shaffer, M.D.
New York: D. Appleton & Company, 1898.

From the title of this work a surgeon would not unnaturally expect a brochure which would represent practically an epitome of orthopedic surgery. In this he would be disappointed, since the book contains a number of essays dealing with the ethics of the specialty rather than with the details of practical treatment. None the less, it is admirable and instructive reading.

The views of the distinguished author upon orthopedic surgery as a specialty are well expressed in the following sentences: "Before it can be a real specialty it must cease to appear in the rôle of a competitor with general surgery. It must not 'overlap.' Its disciples must cease to antagonize the best elements of the profession by posing as orthopedists, when they only lack opportunity to become general surgeons. And until this change is brought about there will be no true orthopedic surgery, except as here and there a man stands up for the right and defies criticism, for it is getting to be almost as rare to find a legitimate orthopedic surgeon as it is to meet with an orthodox gynecologist who does not 'overlap' and compete with the general surgeon in operating for appendicitis, etc."

CLEFT PALATE; TREATMENT OF SIMPLE FRACTURES BY OPERATION; DISEASES OF JOINTS; ANTRECTOMY; HERNIA, ETC. By W. Arbuthnot Lane, M.S.
London: The Medical Publishing Company, Limited.

Lane, who is well and favorably known to the American profession as an ingenious and skilful surgeon, has collected in book form a number of his clinical lectures. These deal with cleft palate, acquired deformities, mechanical or traumatic arthritis, some clinical observations on the principles involved in the surgery of fractures, treatment of simple fractures by operation, some of the consequences of wearing boots, tubercular affection of joints, some experiences in the surgical out-patient room of a children's hospital, treatment of inguinal hernia, a consideration of the principles that should guide us in the treatment of abnormal mechanical conditions of the hip-joint, antrectomy as a treatment for chronic purulent otitis media.

The field covered is a wide one, but the treatment of the various affections is practical, and even the experienced surgeon will find much that is helpful in this little book.

Correspondence.

LONDON LETTER.

BY RAYMOND CRAWFURD, M.A., M.D. OXON., M.R.C.P. LOND.

In the *Journal of Laryngology* Dr. Eugene Yonge reviews the treatment of dyspepsia in laryngeal tuberculosis by drugs and by other methods. In selecting a drug the question to be solved in the bulk of cases is, what local anesthetic, while sufficiently powerful, is also prolonged in action, devoid of marked

poisonous effects, and not specially disagreeable to taste? Dr. Yonge carefully experimented with fifteen local anesthetics, both to ascertain their relative efficacy in relieving pain and also to decide their special fitness for this particular purpose. Like many other physicians, Dr. Yonge is driven to the melancholy conclusion that no drug is ideal for all cases, but that there are several which may be selected in any individual case, viz., cocaine, antipyrin, eucaine, orthoform, carbolic acid, guaiacol, ice, morphine (with or without iodoform), and paramonochlorphenol. He discards as useless holocaine, anesone, aconite, and tropacocaine. When ulceration is present any of the above drugs may be tried, but when there is no lesion of the mucosa, only cocaine, antipyrin, eucaine, carbolic acid, and ice are available. When perichondritis is present, antipyrin appears to be preferable to cocaine because its effects are more prolonged, and the amount necessary to produce analgesia is free from all risk. When cocaine has to be used for a long time, it is best mixed with either carbolic acid or antipyrin, which increases its influence without increase of its substance. Similarly iced solutions of five-per-cent cocaine were quite twice as active as the same strength of solution at the temperature of the air. With extensive ulceration a combination of morphine and iodoform could be relied upon to provide some measure of relief for several hours. Orthoform similarly produced its effects speedily and lasted for some hours, and the complete absence of any toxicity even in comparatively large doses makes it in many cases superior to cocaine. Guaiacol with or without menthol exercises some sedative and antiseptic influence on mild degrees of ulceration. Eucaine is in all ways less active than cocaine, and should be reserved for those cases in which there is any special idiosyncrasy to contraindicate cocaine. Solutions of paramonochlorphenol in glycerin were decidedly anesthetic after producing a preliminary period of rather severe smarting.

Of methods other than drugs, Dr. Yonge prefers rectal feeding, in severe dysphagia, to the esophageal tube, the passage of which is most distressing to the patient and may serve to increase the extent of the local mischief. He has nothing to say of such surgical procedures as curettement, arytenoidotomy, or epiglotdectomy, because he has not yet encountered a case of severe dysphagia which, while uncontrollable by drugs, was such as to justify surgical interference by reason of the state of the lungs and the general condition of the patient.

At the Manchester Therapeutical Society Dr. Wild read a paper on the toxic effects of boric acid. He referred specially to two cases in which this very innocuous drug produced dermatitis and other irritative effects, administered in small doses of ten to fifteen grains over a considerable period of time. Dr. Wild detailed some experiments by which he sought to show the rate of elimination of boric acid in the urine. In the presence of kidney disease toxic symptoms were not unlikely to result from accumulation of the drug in the system. He expressed the opinion that the addition of boric acid in small quantity to food as a preservative was harmless, but exceedingly liable to cause mischief in the larger quantities in which it is sometimes employed.

We most of us regard our overcoats with the reverence they deserve for warding off many evils from our frail selves, but alas! we have nursed a snake on our bosoms. After the recent snow-storm in Birmingham a large number of the men employed in clearing the streets were supplied with overcoats by the Birmingham County Council. The drenching rain saturated the overcoats so that they dripped about the men's hands and knees. Large areas of sloughing skin surrounded by a zone of inflammation and edema testify to the severity of the baptism. In some of the cases the nearest lymphatic glands are acutely enlarged and painful. The medical officer of health reports that the overcoats are replete with chloride of zinc, which is used abundantly in their manufacture. The Birmingham County Council have got the snow-drifts off their hands, but in their stead they have sixty injured employees and 300 death-traps of overcoats.

The Medical Society of London at its last meeting discussed the value of pressure in the treatment of wounds. An interesting discussion took place, and the balance of opinion seemed decidedly against pressure. The advocates of pressure employ it to secure apposition of the edges of wounds, to prevent oozing, to prevent bagging of fluid, to restrain muscular action, to prevent the yielding of cicatrices, and last but not least, to keep the dressings in place. Pressure firm enough to bring the edges of a wound otherwise apart into apposition was not unlikely to provoke sloughing and other evils, in Mr. Pearce Gould's opinion. The use of the drainage tube had rendered it

a quite unnecessary procedure in dealing with pent-up secretions; and, indeed, pressure was more likely to produce than to prevent serous exudations, because it could not influence the arterial circulation, and pressure on veins would certainly tend to this end. Pressure could not conceivably prevent the accumulation of blood in the abdominal veins. Mr. Doran was of opinion that pressure was useful after abdominal operations, because it assisted the patient to pass flatus, which was a cardinal point in the after-treatment of these cases. But Pearce Gould in questioning this special advantage aptly remarked that when a person is suffering from indigestion and flatulence, he does not button his trousers tightly up, but on the contrary makes everything loose.

PARIS LETTER.

By A. R. Turner, M.D. (Paris).

My readers have undoubtedly heard about Dr. Tuffier, professor *agrégé* at the Faculty of Medicine and surgeon of the Paris hospitals, and Dr. Doyen, of Reims, former house surgeon in Labbé's service, who is well known for his success in gynecological operations. There has been some trouble between them, and recently Dr. Doyen wrote an open letter to Dr. Tuffier, which he sent to various medical men in Paris. In it he accuses Dr. Tuffier of having taken the principal ideas carried out in a recent instrument invented by him and used them for his own instrument, which shows only slight modifications from the general plan of Dr. Doyen's invention.

This instrument was called a vasotribe by Dr. Doyen when he first brought it out, and he used it to crush the tissues surrounding the utero-ovarian and uterine arteries, so as to produce compression without ligation or use of artery forceps. In fact, it is a modified artery forceps, with very large jaws and a special groove, all of which was calculated with the greatest care by Dr. Doyen. Dr. Tuffier borrowed the general form of Doyen's instrument, added a new method of bringing the branches together—not so good perhaps as that of Doyen's, and resembling somewhat the basiotribe of Tarnier—and called the instrument by a new name, angiotribe. When Dr. Tuffier presented his invention to the Society of Surgery, he failed to mention Dr. Doyen's name in a sufficient manner, hence this letter.

Dr. Doyen not only upbraids Dr. Tuffier with withholding his name in this communication, but also accuses him in veiled terms of distorting his statistics by important omissions. Dr. Tuffier, it seems, though rather taken aback, is now preparing his answer. All this is a part of a sort of secret rivalry that exists between the surgeons of the Paris hospitals and the younger school of surgeons that has established itself in the provinces and will not bow down and worship the authority of the Paris *confrères*. It is in reality a form of the tendency to decentralization which has begun to show itself, and of which one manifestation consists in the creation of regional universities.

An excellent method indicated by Dr. Humm, of Brunswick, in cases of neuralgia of the head or cephalalgia, consists in the use of pulverizations of ether on the affected spot. These pulverizations, which can be carried out with an ordinary spray, should be kept up until the skin is covered with a white deposit. Sometimes a single pulverization is sufficient; in other cases two or three applications are necessary. These applications do not in the slightest degree hurt the skin.

Dr. Winkler, of Vienna, has come to the conclusion by his researches on the influence of amyl nitrite on animals that this agent when used pure is more harmful than when it is saturated with a gas such as oxide of carbon. By using the drug in this latter condition he did not notice any dyspnea or pulmonary edema such as is observed in some cases when the drug is employed pure. On trying it on himself he saw that there was dilatation of the smaller arteries, as indicated by congestion of the face, but he did not have that disagreeable sensation of fulness in the head such as is felt in most cases. He concludes that the drug well saturated would be advantageously used.

A new treatment of tetanus has been advised by Baccelli, and consists of subcutaneous injections of a solution of carbolic acid. An observation is furnished by Dr. Ziengo, in which the injections were begun eight days after the appearance of the first symptoms in a man having a complicated fracture of the forearm. A three-per-cent solution in distilled water was used, and as there were no signs of intolerance the dose was raised from thirty to fifty centigrammes. No symptoms of poisoning were noticed with the exception of a slight degree of albuminuria. In all there was injected 978 centigrammes of car-

bolic acid in twenty-seven days, and, as Baccelli recommends, morphine (four to six centigrammes) was given at first. The third day of treatment there was a slight amelioration, and nine days later the trismus had disappeared. Complete recovery seems to have been obtained on the twenty-third day. This is the thirty-second case of tetanus treated by Baccelli's method, and there has been so far only one death, which is certainly very encouraging, as the ordinary mortality of tetanus is seventy per cent. Moreover, though a few cases have been cured by Dr. Roux's and Borrel's treatment, a fresh series of cases terminated fatally; but this treatment seems to have been applied in desperate cases, therefore it is readily understood why the results are not more favorable.

The use of gelatin as a coagulant not only in wounds, surgical or accidental, but also as a means of producing coagulation in aneurisms, has given rise to much discussion as to its real action and its efficacy. Some authors have doubted whether gelatin, when absorbed by the cellular tissue, remains what it is at first, and whether its original properties can be relied on. Two fatal cases during the use of gelatin in aneurisms have seemed to throw some discredit on this new method, but then it has not been clearly shown that death resulted from anomalous coagulation. One thing is sure: coagulation by this method depends on the spontaneous coefficient of coagulation of the blood, and it would seem to be necessary to determine this approximately before using this method. On the other hand, death may supervene during this treatment without being due to the treatment. Dr. Fernet had a case of aneurism in his service and was on the point of applying this new method. The patient died the day before, and if he had been injected the very same day grave doubts might have arisen as to the safety of this treatment.

Mr. Carnot, house physician of the hospitals, has published a long article in the *Presse Médicale*, where he indicates in what cases his method may be used. Without being able to more than briefly outline his article, we may say that he uses the method in cases of hemorrhage, according to their being aseptic or septic. In the former case his ordinary solution may be used, which is as follows:

Gelatin, 50 parts by weight;
Chloride of calcium, 10 parts by weight;
Distilled water, 1000 parts by weight.

In some cases a small amount of glycerin may be added, as indicated by Dr. Gueyrat. In sterilizing these solutions the temperature of 115° C. should not be surpassed, and the solution should be used only a few degrees above its liquefying point. When this solution is used in a septic cavity such as the nasal fossæ or the vagina, as it would serve as an excellent means of culture, it should be antisepticized either by the use of corrosive sublimate or a small amount of hydrochloric or hydrofluoric acid, and the tampons laden with gelatin should be left as short a time as possible in contact with septic surfaces. Mr. Carnot is much more reserved in his appreciation of the use of gelatin internally or by subcutaneous injection. He has found that the use of a solution of chloride of calcium is efficacious in the treatment of gastric ulcer, when there is much hemorrhage.

Notes and Queries.

AGAINST PATENTING ANTITOXIN.

The following preamble and resolutions offered by Dr. Arch. Dixon, of Henderson, Ky., at the recent meeting of the Mississippi Valley Medical Association, were unanimously adopted:

Whereas, The general public, the medical profession, and the drug trade of the United States have long suffered extortion at the hands of foreign manufacturers of synthetic remedies; and

Whereas, Our lax and indulgent patent laws bestow a triple monopoly upon the process, the composition, and the name of chemical products for medicinal use, thus excluding every possibility of a healthy competition; and

Whereas, The same evil has been recently disclosed in the domain of biological medicine by the patent granted Professor Emil Behring and the Hoechst-Farbwerke on antidiphtheritic serum, a patent which could not be obtained in Germany, France, England, or Canada; therefore

Be it Resolved, By the Mississippi Valley Medical Association, that the seal of its condemnation be placed upon the unethical and unprofessional conduct of Professor Behring; that it is the duty of every member to renounce the use of the Behring serum; and that the American manufacturers who propose contesting the patent in the courts are entitled to the moral and substantial support of every American practitioner.

Resolved, That an earnest appeal be made to the members of the commission on the revision of our patent and trade-mark laws, appointed by President McKinley, and their assistance invoked for the modification of existing laws and the suppression of prevailing abuses.

Resolved, That a copy of these resolutions be sent to every medical journal in the United States and to the members of said commission, as follows: Hon. Arthur P. Greeley, Assistant Commissioner of Patents, Washington, D.C.; Hon. Peter Grosscup, Chicago; and Mr. Francis Forbes, New York City.

Resolved, That the members of this society be urged to write their congressional representatives at Washington and bespeak their support of any measures of relief ultimately proposed by the Commission.